

Austria	Scd22	Indonesia	Rs3100	Portugal	Esc120
Bahrain	Din2.450	Iceland	Rs3.50	S. Africa	Rs17.20
Belgium	Fls1.450	Israel	Rs3.50	Spain	Rs1.50
Canada	Cd1.30	Japan	Y1000	Sweden	Rs1.45
Cyprus	Cd1.50	Jordan	Fls1.200	Sri Lanka	Rs1.20
Denmark	Dkr12.00	Kuwait	Fls1.500	Switzerland	Swf4.00
Egypt	Fls1.20	Liberia	Fls1.20	Tunisia	Rs1.20
Finland	Fls7.00	Lux	Fls1.20	USSR	Rs1.20
France	Fr15.50	Malta	Rs1.25	Thailand	Rs1.20
Germany	DM1.40	Mexico	Rs1.20	United Arab Emirates	Rs1.20
Greece	Dr2.20	Nicaragua	Rs1.20	United Kingdom	Rs1.20
Hong Kong	Hk\$12.2	Niue	Rs1.20	USA	Rs1.20
India	Rs15.15	Norway	Rs1.20	USA	\$1.00

No.30,641

US ELECTION
Tacticians dominate party campaigns

Page 4

World News

Business Summary

Cuban envoy expelled after shooting in London street

Cuba accused the British and American intelligence services of being indirectly responsible for a shooting incident in London on Monday night, which led the Foreign Office to expel the Cuban Ambassador and another diplomat. Page 22

Monetary tasks open

The first in a series of high-level meetings which may well lay the foundations for a European monetary union got off to a good start in Basle, despite the misgivings of some member governments about the desirability of such a union. Page 23

US consulate drama

Three of South Africa's best-known anti-apartheid activists escaped from detention and took refuge in the US consulate in Johannesburg. Page 22

Deadlock in Burma

Opposition leaders told a state-appointed election commission in Burma that neither they nor the general public would accept a poll organised by the current Government. Page 4

Gulf talks go to NY

The deadlocked Iran-Iraq peace talks will shift from Geneva to New York on September 22, but the Iraqi delegation said it would attend one meeting there if Iran agreed to resume talks in Geneva on a definite date. Page 4

Arafat meets MEPs

Over 1,000 mainly Jewish demonstrators protested outside the European Parliament in Strasbourg, where Palestine Liberation Organisation leader Yasir Arafat addressed Socialist MEPs. Page 2

Hurricane havoc

Hurricane Gilbert intensified, bringing winds of over 200 km per hour to the Cayman Islands after causing severe damage in Jamaica and leaving at least seven dead in its passage across the Caribbean. Page 2

Anglo-Irish talks

British and Irish government ministers held security talks in Dublin, against a backdrop of growing IRA violence. Page 2

Solidarity accused

Poland's Government accused supporters of the banned Solidarity trade union of setting unacceptable conditions for prospective talks Thatcher to visit Poland. Page 2

Swedish bug protest

Sweden said it had protested to the Soviet Union after finding eavesdropping devices in its Moscow embassy for the second time in two years. Page 2

Sikhs shoot 13 dead

Sikh militants shot dead 13 people and wounded about 20 in an attack on crowds in the grain market at Srinagar village market in India's Punjab state. Page 2

Saudi's Japan visit

Saudi Arabian Foreign Minister Prince Saud Al-Faisal might visit Japan this autumn to bolster political and economic ties between the two countries, the Japanese ambassador to the kingdom, said.

Siberians speak out

Soviet leader Mikhail Gorbachev made an impassioned appeal for support of his economic and political reforms as he was harangued by Siberians angry about housing, food shortages and medical care. Page 2

MARKETS

W Germany

FAZ Aktien Index

500

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Jun 1988 Sep

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480

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440

420

400

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380

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340

320

300

300

280

260

240

220

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120

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This Notice does not constitute an offer of securities of BfG Finance Company B.V. but does require action on the part of the holders of the Notes referred to below. If a Noteholder is in any doubt about what action to take as a consequence of this Notice he should consult his usual financial adviser.

BfG:
Bank für Gemeinwirtschaft
Aktiengesellschaft
Exchange of
U.S. \$200,000,000
Floating Rate Notes 1996, Issued in May 1986

for
U.S. \$200,000,000
Floating Rate Notes 1996
of BfG Finance Company B.V.

Secured by a deposit with the London branch of
Bank für Gemeinwirtschaft Aktiengesellschaft

The purpose of the exchange is to replace the Notes of Bank für Gemeinwirtschaft Aktiengesellschaft with new notes of BfG Finance Company B.V., payments of interest on which may be made free of withholding taxes imposed by the Federal Republic of Germany with effect from 1st January, 1989.

BfG Finance Company B.V. offers to make the exchange on the following basis:

U.S. \$10,000 principal amount of Notes of
BfG Finance Company B.V.

Exchange Proposal
This Notice is published in connection with a proposal being made by BfG Finance Company B.V. ("BfG Finance") to issue Notes for the existing U.S. \$200,000,000 Floating Rate Notes 1996 (the "Notes") of Bank für Gemeinwirtschaft Aktiengesellschaft ("BfG"), issued on 22nd May, 1986, a new issue of U.S. \$200,000,000 Floating Rate Notes 1996 (the "New Notes") of BfG Finance, secured by a deposit with the London branch of BfG.

The exchange of Notes for New Notes would take place on 28th November, 1988 (the "Exchange Date"), which is the next interest payment date for the Notes. The interest due on the Notes on that date will be paid by BfG. Definitive New Notes will be available not earlier than 30 days after the Exchange Date upon certification of non-U.S. beneficial ownership.

Full details of the exchange proposal and the New Notes are contained in a circular to Noteholders issued by BfG Finance dated 14th September, 1988 (the "Circular"). Copies of the Circular (together with the related Voting Certificate and Voting Instruction) may be obtained by Noteholders from Cadel and the operator of the Euro-clear system or any of the other addresses listed below.

A Meeting of Noteholders will be held on 6th October, 1988 at which an extraordinary resolution will be proposed to sanction the exchange proposal. If passed, the extraordinary resolution will be binding upon each Noteholder (and the holder of each coupon appertaining thereto), whether or not present at the Meeting or voting on the extraordinary resolution, and the whole issue of Notes will be exchanged on 28th November, 1988 for New Notes. The Notice of Meeting is set out below.

New Notes:
The New Notes will constitute unconditional obligations of BfG Finance and will rank pari passu and equally without seniority or parity among themselves. Due payment of the principal and interest in respect of the New Notes will be secured by the assignment to Bankers Trust Company Limited as trustee for the holders of the Notes (and of the coupons appertaining thereto) by BfG Finance of its rights in respect of the deposit of U.S. \$200,000,000 with BfG at its London branch. Interest will accrue on the New Notes at the same rate and be payable on the same terms, mutatis mutandis, as apply to the Notes. The text (subject to modification) of the terms and conditions to be endorsed on each of the New Notes and a description of the deposit are set out in the Circular. Drafts (subject to modification) of the trust deed by which the New Notes will be constituted and of the deposit agreement are available for inspection at any of the addresses listed below.

Application has been made for the New Notes to be admitted to the Luxembourg Stock Exchange. A description of the New Notes is set out in the Circular.

Meeting of Noteholders:
The quorum at the Meeting of Noteholders to sanction the exchange proposal will be two or more persons present in person holding Notes and/or voting certificates and/or being proxies and being or representing in the aggregate a majority in principal amount of the Notes. If a quorum is not so present the meeting will be adjourned to 20th October, 1988 at the same time and place. The quorum at any adjourned meeting will be two or more persons present in person holding Notes and/or voting certificates and/or being proxies (whatever the principal amount of the Notes so held or represented).

In order to be passed, at the Meeting or any adjournment thereof, the extraordinary resolution must be carried by a majority consisting of not less than three-fourths of the votes cast thereon in accordance with the provisions of the Trust Deed constituting the Notes.

In accordance with normal practice the Trustee expresses no opinion on the merits of the exchange proposal but has authorised it to be stated that it has no objection to the extraordinary resolution being submitted to the Noteholders for their consideration.

Notice of Meeting

Notice is hereby given that a Meeting of the holders (the "Noteholders") of the U.S. \$200,000,000 Floating Rate Notes 1996 (the "Notes") of Bank für Gemeinwirtschaft Aktiengesellschaft ("BfG") having been issued on 22nd May, 1986 and made between BfG and Bankers Trust Company Limited will be held at the offices of Linklaters & Paines, Barrington House, Gresham Street, London EC2V 7JA on 8th October, 1988 at 11.30 a.m. (London time) for the purpose of considering and, if thought fit, passing the following extraordinary resolution in accordance with the provisions of the Trust Deed.

Extraordinary Resolution
"That this Meeting of the holders (the "Noteholders") of the U.S. \$200,000,000 Floating Rate Notes 1996 (the "Notes") of Bank für Gemeinwirtschaft Aktiengesellschaft ("BfG") having been issued on 22nd May, 1986 and made between BfG and Bankers Trust Company Limited subject to the terms and conditions of the exchange proposal made by BfG Finance Company B.V. in a Circular dated 14th September, 1988 to the holders of the Notes and assents to the implementation of such exchange proposal in accordance with its provisions and otherwise in accordance with the terms of the said Circular".

Dated 14th September, 1988

By order of the Board of Bank für
Gemeinwirtschaft Aktiengesellschaft
Gerd M. Rothhardt
Matthias Holmann-Werther
Managing Directors

1. To attend and vote at the Meeting, Noteholders must produce either their Notes or voting certificates. To obtain a voting certificate Noteholders must deposit their Notes at any time with, or to the order of, any Paying Agent (other than a Paying Agent whose specified office is in the United States of America) not later than 48 hours before the time fixed for holding the Meeting or adjourned Meeting but not thereafter.

2. Subsequent to the deposit of the Notes on the date of deposit, the specified amount and specified serial numbers were deposited with, or to the order of, the Paying Agent issuing the same, that the bearer of the voting certificate is entitled to attend and vote at the Meeting or at any adjournment thereof in respect of such Notes and that such Notes will not be released until the earlier of (a) the conclusion of the meeting or any adjournment thereof or any poll taken thereof (whichever is the later) or (b) the surrender of such voting certificate to the Paying Agent which issued the same.

3. Should a Noteholder not wish to be present in person he may either deliver his Note(s) or voting certificate to the Paying Agent, other than a Paying Agent whose specified office is in the United States of America) to the Paying Agent with which, or to whose order, the relevant Notes are deposited at the time of such deposit being not less than 48 hours before the time for the Meeting or any adjournment thereof.

4. Special arrangements have been made for Noteholders holding in Cadel or Euro-clear to vote.

Action Required

(A) Noteholders not holding in Cadel or Euro-clear:
To obtain a voting certificate or voting instruction form, you should deposit your Notes at any of the addresses listed below by no later than 11.30 a.m. (London time) on 4th October, 1988. All voting instruction forms, to be valid, must be returned to the relevant Paying Agent no later than this time and date.

(B) Noteholders holding in Cadel or Euro-clear:
To vote, a holder of Notes in Cadel or Euro-clear should request Cadel or Euro-clear (as the case may be) to block the Notes. A Noteholder may then ask Cadel or Euro-clear to obtain and forward a voting certificate to him or to give voting instructions to any of the Paying Agents listed below.

Documents
The following documents are available for collection or inspection at the offices of the Paying Agents listed below from the date of this Notice until the conclusion of the Meeting or any adjourned meeting.

(A) Documents available for collection by Noteholders:
(i) voting certificates and/or voting instruction forms (in respect of Notes deposited with, or held to the order of, a Paying Agent);
(ii) voting instruction forms (in respect of Notes deposited with, or held to the order of, a Paying Agent); and
(iii) circular dated 14th September, 1988 as to the background to, and the reasons for, the exchange proposal and the Extraordinary Resolution.

(B) Documents available for inspection by Noteholders:
(i) the Trust Deed constituting the Notes;
(ii) the annual reports and accounts of BfG and BfG Finance for the two years ended 31st December, 1986 and 31st December, 1987;
(iii) the constitutional documents of BfG and BfG Finance;
(iv) drafts (subject to modification) of the Trust Deed and Deposit Agreement to constitute and secure the issue of the New Notes.

Principal Paying Agent
Manufacturers Hanover Limited,
7 Princes Street,
London EC2P 2LR.

Paying Agents

BIG: Luxembourg S.A.,
2, rue Jean Berthelot,
L-1233 Luxembourg.

Union Bank of Switzerland,
Bahnhofstrasse 65,
CH-8021 Zurich.

Bank für Gemeinwirtschaft
Aktiengesellschaft
(London Branch),
33 Lombard Street,
London EC3V 9BS.

The Mitsubishi Trust and Banking
Corporation,
4-5, Marunouchi 1-chome,
Chiyoda-ku,
Tokyo 100.

The New Notes have been accepted for clearance on issue through Cadel (reference No. 229083) and through Euro-clear (reference No. 576723). Further particulars are contained in the Circular, which will be sent by Cadel and Euro-clear to their account holders.

This Notice has been issued by Bank für Gemeinwirtschaft Aktiengesellschaft. It has been approved by The Nikko Securities Co., (Europe) Ltd., a member of The Securities Association and of The International Stock Exchange of the United Kingdom and the Republic of Ireland Limited. The Nikko Securities Co., (Europe) Ltd. acted as lead manager in respect of the original issue by Bank für Gemeinwirtschaft Aktiengesellschaft in May, 1986 of U.S. \$200,000,000 Floating Rate Notes 1996.

EUROPEAN NEWS

Fiat chief steps into political row

By John Wyles in Rome

MR Cesare Romiti, the Fiat Group's managing director, has stepped into a simmering party political row by stressing Fiat's growing impatience with obstacles to a draft agreement with the public sector which would leave the Turin group in control of Italy's aero-engine production.

However, the Fiat chief stopped short of threatening to pull out of the accord with the Irif-Finmeccanica state holding company which envisages an exchange of Fiat's railway engineering subsidiary, Fiat Savillano, for the publicly owned Alfa Avvio aero-engine company.

His decision to intervene publicly through a brief interview published by the business daily, *Italia Oggi*, aims at influencing a meeting of the

Government's inner cabinet next week at which the whole question of public sector reorganisation will be discussed.

The Fiat-Finmeccanica understanding together with agreements between Irif and Efin, the state energy company, to collaborate in the gas turbine sector have been frozen by Mr Bettino Craxi, the Socialist leader, pending a coalition agreement on possible restructuring of Irif, Efin and the smallest of the three public holdings, Efin.

One of the factors behind Mr Craxi's intervention is a fear that the Fiat-Finmeccanica accord will damage Efin's railway engineering interests by enabling Finmeccanica's Ansaldo Trasporti to expand into coachbuilding and general railway engineering. The com-

pany currently specialises in the construction of electric locomotives.

Although Mr Bettino Craxi, the Efin president, comes from what is known as the "socialist area", the Socialists tend to regard Efin, whose president is Mr Rolando Vallati, a Social Democrat, as their only real participation in the public sector.

Mr Craxi may be looking to use the railway issue to win more senior jobs for his party in state industry, by breaking the Christian Democrats' domination of Irif, the public sector giant.

The Fiat-Finmeccanica agreement is being presented as strengthening Fiat's industrial domination by holding it in control of another sector.

Alfa Avvio, which specialises in helicopter engines and made profits of just over £16m (£4.6m) on total sales of more than £300m last year, would sit alongside Irif's aero-engine component-manufacturing activities which contributed £300m to the group's £3.6billion sales in 1987. Alfa Avvio's principal customer is Fiat's Avio aero-engine manufacturing company.

Incorporating Savillano with its £120m of sales into Ansaldo Trasporti would create two roughly equal competing public sector railway groups at the expense, Efin claims, of its Breda Ferrovaria subsidiary. The group warns that this could cost jobs in the Mezzogiorno where 3,500 of Breda's 5,000 employees are based.

He told a meeting of Socialist European MPs that such talks could take place at a proposed international peace conference under United Nations auspices. His speech was seen by observers as providing some insight into the PLO's plans before an as yet unscheduled meeting of the Palestine National Council (PNC), which the Palestinians consider their parliament in exile.

A conference could "discuss and agree arrangements for international guarantees of peace among all states of the region, including the independent Palestinian state." An independent Palestinian state, established on territory "liberated" from Israel, would have "a republican, democratic and multi-party system" and would "not discriminate among its citizens on the basis of colour, race or religion."

Contrary to expectations, the PLO contained little new material and will not encourage Western governments which have been hoping that the PLO would build on the nine-month truce in the occupied territories with a new political initiative. This may reflect the increasing controversy over policy options.

As pro-Israeli and Arab demonstrators marched outside, Mr Arad called for the withdrawal of Israeli forces from occupied territories and criticised the EC for failing to use its full weight and credibility in defining the process conducive to a comprehensive peace settlement.

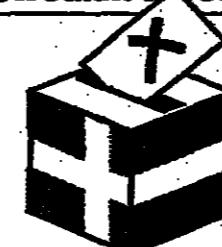
In recent years, Chileans, Iranians and Kurds have settled in Sweden, while many immigrants came to fill job vacancies in the Sixties from countries like Yugoslavia, Greece and Turkey.

As many as a million of Sweden's population of 8.4m are immigrants or have at least one immigrant parent and foreign "nationals" account for 5 per cent of the workforce. Last year an estimated 20,000 people from overseas obtained permits to stay in the country. The Swedish state provides a wide range of services to help foreigners to settle down in the country, including free lessons in Swedish for both adults and children. In the present financial year the Government is spending \$500m on the reception of refugees.

There is a bipartisan attitude towards immigration in Sweden that remains fairly strong, though some politicians on the right are concerned that the country is perhaps being used by terrorist groups like Abu Nidal and the Provisional IRA for rest and recreation.

Sweden has touched a raw nerve in Sweden but it does not portend the rise of a popular fascism. By lifting the tacit national taboo on talking about the foreign born, next Sunday's referendum may have served a useful purpose, although a No to immigrants' victory would plunge the country into a bitterly emotional debate that could undermine the reasonably good communal relations that appear to exist at the moment, at least on the surface of Swedish life.

Swedish Elections



Sjöbo vote touches a raw nerve

Robert Taylor finds a Swedish town which has refused immigrants

SJOBO is a small, unassuming town set in the rolling, fertile countryside of Skane in southern Sweden. A quiet enough place, it looks prosperous and dull with not a car in the world. But in the Swedish general election campaign it has become a byword for intolerance and aroused a passionate national debate about the country's attitudes to foreign-born immigrants.

The cause of the controversy is that the good citizens of Sjöbo will be voting on Sunday in a referendum on whether or not they want to accept refugees into their midst.

The town is one of only two local councils in the country which has refused the Government's request that they must shoulder their responsibilities by adopting a welcoming attitude to foreigners who wish to settle there and its elected leaders want to maintain their hostile attitude. An opinion poll carried out locally at the end of August suggests that a narrow majority of Sjöbo voters agree with them. Feelings among men in the town are particularly antagonistic to immigrants, though women appear to be much more tolerant.

Sjöbo is not ruled by fascists but by a coalition of the respectable Centre and Moderate parties. Their national leaders have repudiated what they are doing. Mr Olof Johansson, the Centre leader, has made it clear that he intends to expel a number of his party colleagues in the town after the election, condemning them as "brown hicks" sheltering under the green flag of his party.

What has particularly focused nationwide attention on Sjöbo over the past week has been the discovery that an anti-immigrant booklet pushed

through letterboxes in the town was written by members of the fascist New Sweden movement, but paid for and supported by the local Centre party led by Mr Sven-Ole Olson, who ran the council for 12 years and still enjoys a dominant influence among the voters there.

Across the road from Sjöbo town hall, organisers of the campaign for a Yes to the immigrants' vote in Sunday's referendum feel very much on the defensive. Their campaign van was vandalised last Saturday night and they face the occasional taunts of passers-by. "This place is fantastic," said one of the group handing out leaflets. "They think you're foreign if you come from Lund (about 15km away)."

In fact, there is only one political refugee in the whole of Sjöbo. He comes from Chile, though a couple of hundred Danes mingle in the population of about 15,000.

Ms Eva Thede, a councillor from the Green Party, admits that it is an uphill struggle to convince local people that their attitude is unacceptable. Indeed, the organisers are divided about what they expect to happen in Sunday's referendum. Some believe that the adverse national publicity will tend to harden the anti-immigrant attitudes.

Many now see it not just as a question about whether to have foreigners here or not, but whether politicians in Stockholm should decide how they should think," argued one of the Yes organisers.

For their part, the anti-immigrant supporters in Sjöbo suggest that foreigners will swamp the town's social services, undermine full employment and lead to a housing shortage. They argue that Sweden takes far too many immigrants

already and that those who have come are turning the country into a multiracial society, which will destroy the purity of Swedish culture.

So far, Sjöbo has not attracted the bald-headed punks in biker boots that characterise the country's Islamic right-wing fringe in the cities, as elsewhere in Europe.

But Sjöbo has aroused widespread anxiety across the country. "It was not for Sven-Ole Olson, there would have been no trouble here," said a local journalist. However, many consider that he is targeting a deep-seated underlying fear that may well exist over large areas of provincial Sweden. This is why all the national party leaders have taken such a strong line against Mr Olson and his friends. "What is happening here is a disgrace to Sweden," said one organiser. "It will do immense damage to our international image. By trying to shame the people of Sjöbo they hope to prevent the spread of such attitudes across the country."

Compared with much of western Europe, Sweden has an admirable record in welcoming foreign-born people, particularly those seeking asylum from political persecution. The former Austrian Chancellor Bruno Kreisky came to

PLO ready for talks with Israel, hints Arafat

By William Dawkins in Strasbourg and Andrew Gowers in London

MR YASSIR Arafat, Palestine Liberation Organisation chairman, yesterday gave a fresh hint that he could hold discussions with Israel on resolving the Palestine conflict, but provided little fuel for speculation about a radically new PLO approach to the issue.

He told a meeting of Socialist European MPs that such talks could take place at a proposed international peace conference under United Nations auspices.

OVERSEAS NEWS

Malaysia has 9% growth in first half

By Wong Sulong in Kuala Lumpur

MALAYSIA enjoyed a 9 per cent growth rate in gross domestic product for the first half of this year, following a 10.5 per cent rate in the second quarter, Dr Mahathir Mohamad, the Prime Minister, said yesterday.

He said the second half was expected to be less buoyant because of some weakening of commodity prices, but would nevertheless be above official forecasts.

Dr Mahathir said foreign investments during the first half was "800 per cent higher" than the level last year, although he did not give any figures. The sharp jump was believed to be partly due to the approval of two big capital projects.

In March this year, the Government had forecast GDP growth for 1988 at 5.5 per cent, after 4.7 per cent last year.

Malaysian finance officials say the economy, which made a decisive turnaround in the second half of last year on the strength of rising exports, is now experiencing a broad-based recovery, with the manufacturing and services sector picking up strongly.

Impressive growth has been recorded for electronic and electrical goods, textiles, and rubber-based products.

The construction industry which has been in decline since 1983, is also expected to record modest growth this year.

The semi-official Malaysian Institute of Economic Research, has estimated that



Mahathir: above forecast

the country's exports for 1988 would rise to Ringgit 45.1bn (\$11.35bn) from Ringgit 45.1bn last year, because of higher earnings from rubber, palm oil, timber, tin and manufactured goods. Imports are projected to rise even faster to Ringgit 36.3bn from Ringgit 21.9bn.

The balance of payments surplus for 1988 is estimated at Ringgit 8bn compared with Ringgit 5.88bn last year.

Mr Daim Zainuddin, the Finance Minister, will present his fifth budget on October 21 in which he is expected to make further efforts to reduce the country's external debt of Ringgit 45bn and to balance the Government's budget on the current account by 1988. The manner in which the Government had exercised financial discipline had drawn considerable praise from international monetary authorities.

Howe holds Uganda talks

By Michael Holman, Africa Editor, in Kampala

UGANDA'S economic recovery programme was expected to be a key issue in talks yesterday between Sir Geoffrey Howe, the British Foreign Secretary, and Mr Yoweri Museveni, the Ugandan president.

Disbursement of a \$10m tranche of UK aid to Uganda is conditional on Uganda reaching agreement on an economic programme drawn up in consultation with the International Monetary Fund and the

Botha visits underline neighbours' reliance on S Africa

By Jim Jones in Johannesburg

PRESIDENT P.W. Botha's two days of visits to Mozambique and Malawi this week are being seen in Pretoria as demonstrating South Africa's commitment to regional co-operation and friendship.

While his talks with President Joaquim Chissano of Mozambique and President Kamuzu Banda of Malawi have led to promises of South

African aid to both countries, observers believe the assistance is equally designed to underscore their economic reliance on South Africa.

Yesterday President Banda announced his country's debt to South Africa is to be rescheduled. He added Malawi is to be given 3,000 tonnes of South African maize for the thousands of refugees who

have fled across the border from Mozambique's civil war.

Aid to Mozambique, announced on Monday, is more comprehensive. South Africa is committed to helping upgrade Mozambique's crumbling railways and roads, to helping rehabilitate Maputo harbour and encouraging South African exporters to ship goods through Maputo

and to taking electrical power from the Cahora Bassa dam. Less tangibly, the abortive 1984 Nkomati non-aggression pact is to be re-activated and South Africa is again pressurised not to aid MRER rebels in Mozambique. In return Pretoria expects Maputo to deny African National Congress guerrillas infiltration routes through Mozambique.

Two years ago, after incursions by ANC guerrillas through Mozambique, Pretoria threatened to stop new migrants and repatriate men whose employment contracts expired. The threat was taken seriously as about four-fifths of Malawi's migrant miners were infected, and mineowners intend to stop men with the disease from entering South Africa.

Africa's mines. Normally only 15,000 Malawians are employed on South Africa's mines at any one time - but their annual earnings of about R75m (£18m) are threatened by AIDS. About half Malawi's migrant miners are infected, and mineowners intend to stop men with the disease from entering South Africa.

Water brings Lesotho chance of prosperity

Anthony Robinson reports on an ambitious South African water transfer project

A \$2bn project to transfer water from the mountains of Lesotho to South Africa's thirsty industrial power house, the Perton-Witwatersrand-Vereeniging (PWW) area, is taking shape in this landlocked kingdom surrounded by South Africa.

A South African construction company, Ite, is driving a 65km access road through some of the highest mountains in Africa while British and other foreign engineers are camped above a deep river valley preparing the site for a 170 metre-high concrete dam which will reverse the flow of Lesotho's main river system.

The aim of the Lesotho highlands water project is to divert northward up to 70 cubic metres per second (cms) of water which at present runs uselessly into the Atlantic Ocean, over 1,500km away. But that will only be on completion of the final stage in 2020.

Without the water pouring north from Lesotho by the force of gravity along a system of tunnels cut into the basalt mountains, the PWW will lack water to sustain its growth. With it, the first deliveries of

18.3cms of water into South Africa's Ash River and from there into the Vaal Dam 70km south of Johannesburg will take place in 1995.

For Lesotho, it is the biggest project which has ever happened to one of the world's poorest countries. It is totally dependent on South Africa for electricity and most other supplies and its main sources of income consist of foreign aid and remittances from over 100,000 Basuto miners working in South African gold mines.

These basics will not change fundamentally. Lesotho will always be mountainous, relatively poor and an exporter of labour. But the hydro-power scheme built into the first stage of the project means that it will become virtually self-sufficient in electric power when the turbines at the Muela hydro power station 45km north of the 170 metre-high Katse Dam start delivering 700mw of power into newly-built power lines.

By the end of phase two in 2008, this will rise to a maximum of 1000mw after the construction of two more downstream dams at Mohale and Masha and two more transfer tunnels to take the water 75km north of Katse.

During the 30-year construction phase, several thousand jobs will be created directly and through the expected boost to tourism, fishing and irrigated agriculture. In addition Lesotho will earn steadily increasing water delivery income plus Rand 1.8bn (£318m) in royalties over the 50-year life of the project.

Lesotho, advised by Standard Chartered Merchant Bank, is responsible for raising capital from the World Bank, the European Community and individual country and commercial lenders. But the loans will be guaranteed and serviced by South Africa which is responsible for the 85 per cent of the project connected to water transfer.

In theory South Africa could have obtained the water from Lesotho's rivers for nothing, by tapping the Sequa River as it flowed south-west down into South Africa's Orange River. From there, however, the water would have to be pumped several hundred miles north to the PWW instead of flowing by gravity as in the Lesotho scheme, which makes use of the dams to reverse the natural flow of the rivers.

But if Lesotho gains the lion's share of the national savings, jobs, electricity and spin-off from the scheme, South Africa, barred from the world's capital markets since 1985, obtains indirect access to foreign capital.

embassies and harboured African National Congress activists.

The last straw was the decision to allow Cuba into Lesotho. This led to an economic blockade in January 1986 followed by a military coup which brought General Justin Lekhanya to power at the head of a military council. The military is still in power and the constitution, abrogated in 1970, is still in abeyance.

But the Government, which has been gearing up for a popular visit in the next week which could bring over 1m South African Roman Catholics over the border, is plodding doggedly ahead with plans to define national economic and social priorities. The aim is to pave the way for an eventual return to civilian rule with a clearly defined programme.

This aim has the discreet backing of Pretoria, which has friendly relations with the military government but sees the longer-term advantages of a return to stable, civilian rule in a country which, with South African help and foreign capital, could be on the threshold of unprecedented, albeit still modest, prosperity.

Japan lifts N Korea sanctions

By Stefan Wegstyl in Tokyo

JAPAN IS lifting diplomatic sanctions imposed on North Korea in the hope of promoting better relations between North and South Korea. The move is also designed to improve bilateral relations with Pyongyang which were soured in 1983 by the detention in North Korea of two Japanese seamen.

The sanctions were applied in January in retaliation for North Korea's alleged part in a terrorist attack last year on a South Korean airliner which left 115 people dead.

Mousavi setback

The Iranian parliament has been snubbed by Mr Hussein Mousavi, Iran's Prime Minister, by rejecting three ministers from his Cabinet, writes Andrew Gowers. On Monday night, the Majlis approved 18 ministers, but rejected Mr Mousavi, Raffi Doust, the Revolutionary Guards Minister, and holders of the education and agriculture portfolios.

HK 6% growth rate

The Hong Kong economy is heading for growth of 6 per cent in real terms during 1988, against 5 per cent originally forecast, Mr Peter Jacobs, the colony's Financial Secretary, said yesterday. Michael Marry writes from Hong Kong.

No evidence of gas

UN and Red Cross representatives found no evidence that chemical arms had been used against Iraqi Kurdish refugees whom they saw last week in north-west Iran, a spokeswoman said yesterday. Reuter reports from Geneva.

Iran-Iraq talks move to New York

By William Dulforce in Geneva

THE DEADLOCKED Iran-Iraq peace talks under UN mediation will shift their venue from Geneva to New York on September 22, with both sides agreeing to continue the ceasefire.

Mr Jan Eliasson, the UN mediator, announced yesterday after a 20-minute session with Mr Ali Akbar Velayati, the Iranian Foreign Minister, and Mr Tariq Aziz, his Iraqi counter-

part, that they had accepted invitations to meet Mr Javier Perez de Cuellar, the UN secretary-general, in New York.

Both sides were prepared to "pursue the overall peace process" in Geneva, following the talks to start two days after the UN general assembly begins. Mr Eliasson said Iraq had resisted Mr Perez de Cuellar's wish to shift the talks permanently to New York.

Mr Eliasson acknowledged that no progress on issues of substance had been achieved since talks started in Geneva on August 25.

The stalemate comes from Iraq's insistence on guarantees that the drawing of the ceasefire line will not jeopardise its claim to sovereignty over the Shatt al-Arab waterway and its demand that Iran drop its right to search Iraqi shipping

Burmese search for peace

By Roger Matthews in Bangkok

OPPOSITION LEADERS in Burma yesterday sought a peaceful way out of the impasse which is threatening further and more violent clashes with the Government.

They are said to fear that unless the Burma Socialist Programme Party, which has been in power for 26 years, agrees to step down, it may be impossible to prevent serious confrontations in the next few days

AMERICAN NEWS

Poison enters the froth of US campaign

Stewart Fleming considers who started the mudslinging in the US election tactics

THE US presidential election is increasingly dominated by campaign tacticians and their determination that their candidate dominate the television news headlines. "Politics Lite, with lots of froth and little annoying substance" was how Time magazine this week headed its report on the subject.

If it were only froth that would be one thing. But the froth has been of the polemical variety, more like the scum on chemically polluted rivers than the frustrating first sip of a clumsily-poured pint of beer.

Who first injected the poison into the political debate is a question which is answered in different ways, even by independent observers. Was it Michael Dukakis, the man whose cool competence was once admired by many political commentators but is now demagoged as the aloofness of a stubborn and humourless "square"? He has been seeking to blacken Vice President George Bush's reputation by implying that he turned a blind eye to General Manuel

Noriega's drug trafficking. Or was it the Bush team and President Ronald Reagan by encouraging the press last month to pick up on unsubstantiated reports that Mr Dukakis had been treated for depression and was, in Mr Reagan's words, an invalid. It was a both a crude and subtle attack, subtle because since then commentators have begun to focus on the Governor's earnest demeanour.

Certainly it was the Bush side which impugned the Governor's patriotism for voting 13 years ago a bill before the Massachusetts state legislature which would have required teachers to lead their classes in reciting the Pledge of Allegiance at the beginning of the day.

And it was the Republicans on Capitol Hill last week who forced a vote on whether the House of Representatives should recite the pledge, embarrassing the Democrats once again.

It is designed in part to summon up memories of an earlier era when Democrats led the fight against the Vietnam War, allowing themselves later to be portrayed as "blame America firsters" who are not prepared either to fund adequately the US military or to use its power to further, as so many conservatives see it, the American crusade to put the world right.

Mr Dukakis's sterile response to the challenge on the Pledge of Allegiance may well mean that, like President Jimmy Carter in more difficult circumstances last year faced by challenger Ronald Reagan and a troubling foreign policy crisis, he has allowed Mr Bush to capture the flag, the issue of patriotism.

This plays into Mr Bush's hands in a number of ways. It puts the Governor on the defensive and helps Mr Bush focus attention on the issues of defence and foreign policy which he sees as his strong suits. It also helps him solidify his conservative and regional base.

It is ironic to watch Mr Bush exploit his opportunity, as he did on Monday, as he announced his "bipartisan"

foreign policy task force calling for America to maintain its military strength and castigating Governor Dukakis for wanting to turn to the United Nations and "bipartisanship" for leadership.

What is increasingly worrying political analysts in Washington, however, is the longer-term implications of the issues and negative campaign that they are witnessing. Many recall that it was the empty "Morning in America" made for television campaign in 1984, the year the Olympics were held in Los Angeles, which signalled the beginning of the end of the Reagan presidency.

Will history repeat itself for two candidates who lack Mr Reagan's ability to reach out over the head of Congress and appeal for support to the American people? By avoiding a detailed debate on the substantive problems facing America and resorting to "slash and burn" campaigning, will the man who wins the White House find that when he takes up residence in January he will not have the stature to set a national agenda with any hope of seeing a significant part of it carried out?

Chile opposition TV programme banned

By Mary Helen Spooner in Santiago

CHILEAN GOVERNMENT television has banned a short programme by opposition groups calling for a "no" vote against General Augusto Pinochet, in the October 5 plebiscite.

The programme, which was to be aired on Monday night, contained statements by a Chilean judge who has investigated allegations of torture by the country's security police, the CNI, and who last year received death threats.

Last week Chilean television began giving air time to the "no" campaign, with government supporters and opponents presenting their views on late-night broadcasts.

The country's television networks remain the most tightly restricted of all Chilean media, with a daily pro-regime slant to news and public service programmes and frequent government advertisements.

The decision to ban the opposition programme was

made by Chile's National Television Council, whose members consist of officials from the Education Ministry and the regime's communications office, along with other government-appointed functionaries.

The Council advised the Command for a No Vote, a coalition of 16 Chilean parties, that the interview with the judge, taken from film footage broadcast on European television last year, could not be used as part of the "no" campaign's propaganda.

The Council passed the government's campaign programme, which showed Gen Pinochet. He visited the regional offices of the pro-government newspaper El Mercurio on Monday, and said: "Freedom of the press is the basis of all liberties."

The Chilean Government's campaign is striving to present Gen Pinochet as a moderate, urging voters to "say yes to democracy."

Dukakis calls for response to Soviet reforms

By Stewart Fleming in Washington

GOVERNOR Michael Dukakis called yesterday for the US to respond positively to the challenge presented by Soviet leader Mikhail Gorbachev's new initiatives and charged Vice-President George Bush with refusing to recognise that US/Soviet relations are in flux and with yielding the arms control initiative to Moscow.

The Dukakis has focused on foreign policy in part to test the limits of what is called "new thinking" in the Soviet Union. . . they want to turn back the clock," Mr Dukakis said in the second of three big foreign policy speeches he is making this week.

Many political analysts, including some of his top advisers, maintain that Mr Dukakis must try to put the focus on the future and present himself as an agent for modest change in the US if he is to seize the political initiative from Mr Bush.

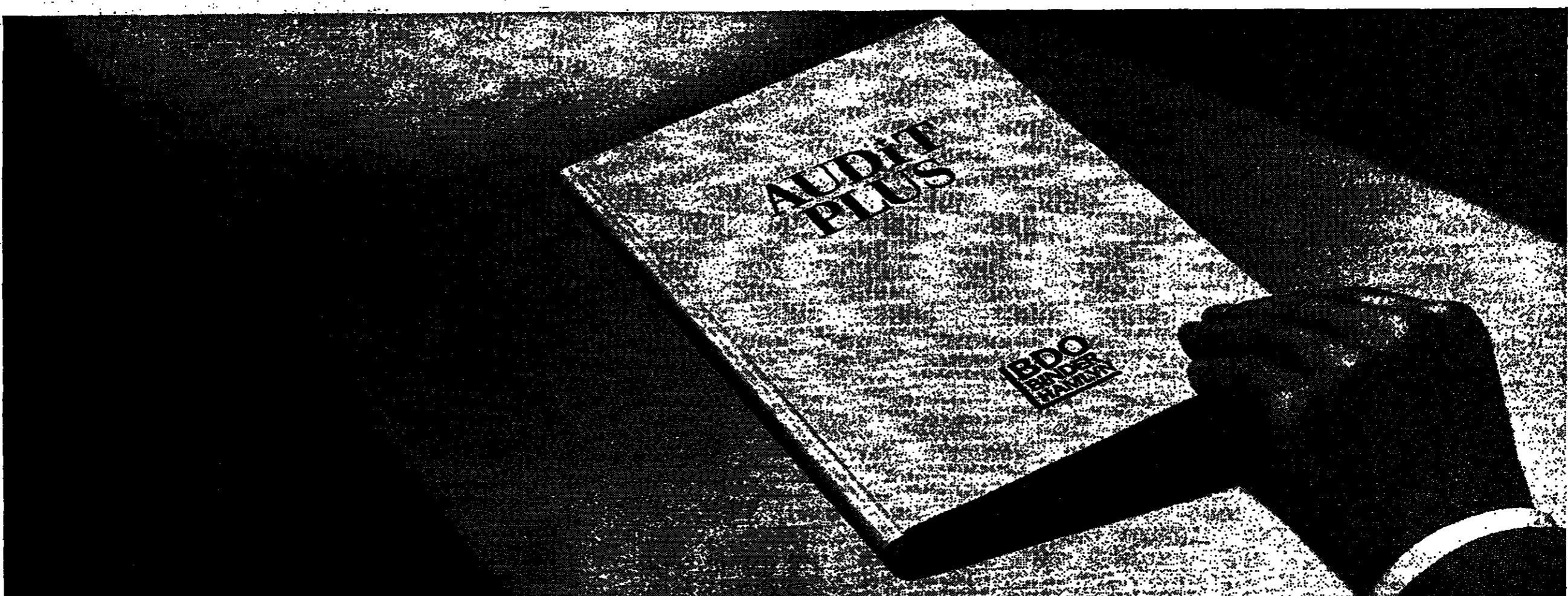
He is also being advised to attack Mr Bush's choice of Senator Dan Quayle as his running mate.

Mr Dukakis said that as president he, "along with our Nato allies, will challenge Mr Gorbachev to eliminate the Soviet advantage in conventional forces, to work with America, to cool not fuel" regional conflicts.

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WORLD TRADE NEWS

US rice millers seek entry to Japan

By Peter Montagnon in London and Ian Rodger in Tokyo

THE US Rice Millers Association is to file a formal unfair trading complaint today with the US Trade Representative in Washington, seeking action to open Japan's market to rice imports.

The complaint is the first such major action to come from the private sector since the passage last month of tighter new trade legislation and is carefully timed to draw maximum advantage from the issue in the run-up to November's Presidential election.

Until now, the US, which earlier this summer secured a Japanese agreement to open its market to US beef and citrus products, has carefully avoided tackling Japan's closed rice market because of its high

political sensitivity.

A spokesman for the US Trade Representative in Washington yesterday declined to speculate on how the Reagan Administration will react to the complaint, but it will have 45 days from today to decide whether to take it up.

This period will expire almost exactly a week ahead of the election, which could push trade policy into the limelight in the closing days of the campaign especially given the importance of rice in the electorally key state of California.

On Monday, Mr Michael Dulak, the Democrat contender for the Presidency, sought to raise the stakes on trade by promising vigorous action under the new trade

bill. However, the Reagan Administration would be risking a major confrontation with Japan by threatening action over rice, trade experts say.

Although Japan has twice reduced the internal government support price for rice in recent years, farmers, backed substantially by public opinion, are adamantly opposed to opening the market to imports.

They argue this would undermine rural communities by driving Japan's traditionally small-scale farmers into bankruptcy and pose a threat to national security because Japan would become dependent on imports for a staple foodstuff.

Among options expected to

be considered by the US now, are to reject the petition on the grounds that the Uruguay Round will be subject to an official mid-term review in Montreal this December, or to take the matter to the General Agreement on Tariffs and Trade in Geneva. Both would avoid any short-run threat of sanctions.

In Tokyo yesterday, Mr Takashi Sato, Japan's Agriculture Minister, said the US Rice Millers' move would not lead Japan to liberalise its rice imports.

Japanese officials had told US leaders repeatedly that rice had a special position in Japanese culture, and there would be no change in the country's agricultural policy, he said.

Soviet exports may face dumping action

By Quentin Peel in Moscow

SOVIET EXPORTERS eager to take advantage of new freedom to conclude their own sales contracts could be hit by a rash of anti-dumping actions in the European Community and other markets, a leading Soviet trade analyst has warned.

They could also face a sharp increase in complaints from EC competitors in the run-up to 1992 as the reduction of internal EC trade barriers creates greater temptation to raise external barriers, he believes.

The warning was issued by Mr Alexei Shagurin, scientific secretary of the Institute for Market Research.

The dismantling of the former Soviet Ministry of Foreign Trade and the granting of the right to export directly, given to some 200 individual enterprises and ministries, had brought with it real dangers for the new exporters, he said.

That reform has yet to be introduced, and indeed Mr Mihail Gorbachev, the Soviet leader, is still conscious that he will have to move very cautiously for fear of causing a domestic backlash. Meanwhile, Soviet exporters still have to find an acceptable yardstick for their export pricing, Mr Shagurin said.

"The Soviet refusal to recognise the Community certainly has had a negative effect. Direct relations with the EC can only help."

Indeed, the first sign of a change in Soviet attitudes towards the Community - leading finally to diplomatic recognition last June - was when a Soviet lawyer appeared to contest an anti-dumping case in the European Court of Justice in 1986.

"These cases often arise because we have another system of prices," Mr Shagurin said. As a result, Soviet producers, and EC investigators, have no天然的 yardstick to judge genuine economic costs, and therefore a fair international price for their exports.

"These prices were fixed during a period when our country was isolated," according to Mr Valeri Goreki, a researcher at the institute. "Sometimes they are quite unrealistic. That is why we are now undertaking a price reform."

That reform has yet to be introduced, and indeed Mr Mihail Gorbachev, the Soviet leader, is still conscious that he will have to move very cautiously for fear of causing a domestic backlash. Meanwhile, Soviet exporters still have to find an acceptable yardstick for their export pricing, Mr Shagurin said.

"The Soviet refusal to recognise the Community certainly has had a negative effect. Direct relations with the EC can only help."

Tokyo cash buys a home among equivocal Thais

audio tapes face similar opposition.

• Wages. Japanese companies are leaving away staff from Thailand with higher wages. They have created a shortage of engineers and skilled workers, some Thai companies say.

Mr Kubokawa could have mentioned other terms of discontent including:

• Slow transfer of technology. Most Japanese firms do very little in terms of technology transfer to Thai engineers, says Dr Atchana. "Most of the technology has been reluctantly transferred." Japanese nationalists are also kept in mind: management positions long after an American or Korean company would have replaced them with Thais, economists say.

• Construction. More than two-thirds of multi-storey buildings go to foreign firms - most are Japanese, the local industry says. Local contractors say they cannot compete, but their voice is muffled because many Japanese contractors form joint ventures with Thai companies.

• Thailand, like some other nations, is upset with what is seen as tied aid. There is some concern about the level of Japanese investment among local investors because they are afraid of the overcapacity, said a senior official from the Government's Board of Investment (BoI).

In the first six months of 1988, the BoI approved more Japanese capital investments than in the 26 years since it started offering incentives. Japanese companies accounted for 15 per cent of total investment at the end of 1987, three times the level of the US, the next largest investor.

For Japan, which turned up the foreign investment tap in September 1985 after the Group of Five industrial countries met and the yen started to double its international value, Thailand is still small beer, accounting for less than 1 per cent of its overseas investment.

Even in Asia, Thailand still comes lower than Indonesia, the biggest recipient. Singapore and Malaysia, which is often seen as Thailand's closest competitor for foreign investment, Japan's profile is higher in Thailand because new investments are in many businesses rather than industrial complexes, economists say.

Japanese officials remember anti-Japanese demonstrations in the more xenophobic Thailand of 1973 and say their companies are trying to be "modest and moderate."

"As long as there is no political or economic instability, there will be no anti-Japanese sentiment," says Mr Isao Kubokawa, President of the Japan External Trade Organisation (Jetro) in Bangkok. "But if there will be economic instability, like trade conflicts, Japan will easily be a scapegoat." He admits there is already some friction and identifies possible sources.

• The rising price of land, a three-fold increase in some cases. "The Japanese have very high purchasing power and tend to buy everything, especially land," says Dr Atchana. Westtanakorn, and the professor of economics at Bangkok's Thammasat University, Mr Kubokawa partly blames the Thai Government for not having a clear land policy.

• Suspicion of the local market by Japanese companies. "Japanese companies feel the Thai Government is not very helpful," says Kubokawa. "It is difficult to make household electrical appliances. About 80 per cent will be imported, but the Thai market is becoming so large that the other 20 per cent is likely to come from local producers. That's why the BoI is not very pleased. They are not sure about the BoI's plan for producing

the local market."

Japanese sensitivity to their position in Thailand extends beyond the business sphere. In June, Mr Kintachai, a Thai boxer, would have been awarded in a title fight in Japan but only after the Japanese authorities had made the final decision. The BoI, in seconds, denied the boxer entry into the country, causing the boxer to knock out his opponent to the ensuing outrage in Thailand. The Japanese boxer, based in Bangkok, was reportedly paid and said the title would have won the boxer.

All Philippines drugs to carry generic names

By Richard Dowley in Manila

THE PHILIPPINE Congress, acting yesterday, signed a bill requiring the use of generic names for all drugs sold in the Philippines. The move is a strong opposition from many manufacturers and pharmacists.

Under the bill, which is to become law by 30 June, will force drug companies to use generic names, such as 'Acetaminophen', for their products. The bill is to be implemented in 15 months.

Local manufacturers have already criticised the legislation, saying it takes no account of manufacturers' research and development costs and could lead to a deterioration in quality unless the government strictly controls locally produced drugs.

The bill also increases the authority of the Health Department to regulate the industry and the import of the active ingredients which are made outside the Philippines.

The Philippine pharmaceutical market is worth some \$300m a year to the 76 members of the Philippine Association of Manufacturers, of which are large multinational producers, according to Mr Peter Wallace, a consultant for the industry.

During an acrimonious campaign opposing the bill, some foreign companies, a US Senator and the American Chamber of Commerce in Manila criticised what they saw as state encroachment into the industry. They branded the legislation anti-foreign investment, while Mrs Aquino yesterday said its aim was to deliver an affordable health service.

Italy moves to accept Karin B toxic waste

By John Wiles in Rome

THE ITALIAN government made some progress last night towards winning local acceptance of the arrival at the port of Livorno of the much-travelled and much-rejected merchant ship the Karin B, with the cargo of 2,100 tonnes of toxic waste.

At the end of a meeting with the presidents of the regional administrations of Tuscany and Emilia Romagna, Mr Giorgio Ruffio, the Minister of the Environment, said no final decision had yet been taken about where the Karin B would finally dock, but the choice lay between Livorno and Ravenna.

Technical experts have studied both ports and are producing proposals for the safe unloading of the German vessel's cargo from an illegal dump at the Nigerian port of Koko.

After being rejected by Ravenna, hopes of disposing of the waste in northern Europe were frustrated by the refusal of French, British and Dutch authorities, among others, to allow it to dock.

The Tuscan representatives made it clear last night that they were not happy about the possible choice of Livorno but they implied that they would not refuse the ship if there were adequate government proposals for unloading, storing and eventual disposal.

A second ship is still at sea with a cargo from Koko and a third is expected to be chartered to remove the last of the waste from Nigeria.

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Dividend	15.0p	14.0p	up 7%

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UK NEWS

Post workers trickle back

By Charles Leadbeater, Labour Correspondent

ONLY a small proportion of the 100,000 postal staff who have been on strike for the last 13 days returned to work yesterday. The Post Office and leaders of the Union of Communication Workers agreed to end the dispute on Monday.

Only some 4,000 staff had returned to work yesterday evening at 47 small offices. Of the 80 big mechanised sorting offices, which form the core of the corporation's network, only staff at three - Tunbridge Wells in Kent, Shrewsbury and Brighton - had returned to work.

The Post Office said that it expected more staff to return on the night shift, including workers at three other mechanised sorting offices at Southampton, Portsmouth and

Newcastle.

Despite the significant return to work UCW leaders and Post Office officials said there were no signs that the national agreement was fuelling local resistance. The Post Office said that it still expected the first deliveries to be made by the end of the week, and postal services to return to normal within two weeks.

Managers have to agree with local union branches measures to clear the backlog of 10 million letters and parcels, which has built up through the dispute over the corporation's decision to pay special recruitment supplements in the south-east.

The most contentious issue will be the mix of extra overtime and increased use of

Rivals set to tie up valuable packets of postal business

Alice Rawsthorn counts the strike's cost to the Post Office

AS THE postal workers struggle to clear the mountain of undelivered mail and to resume a normal service, the Post Office must assess the long-term impact of the postal strike on its business.

In the last national stoppage of 1971 the courier companies, telex networks and even motorcycle messenger services were in their infancy. This time an infrastructure of couriers and messengers was available to deliver the letters and parcels usually entrusted to the Post Office.

Letters were sent by fax or telephone. Parcels were bundled off to private couriers. The motorcycle messengers and bicycle companies enjoyed a bonanza of extra business. The critical question for the Post Office is how much of this business can it recover? And how much has been lost?

The Post Office is confident that it can regain its standard letter business. The cost of sending letters by fax or carrier is so high that most customers will return to the Royal Mail as soon as normal deliveries are resumed.

Datpost, the premium letter service, may be more vulnerable. Many courier companies offer similar services. Interlink expects to retain 40 per cent of the 14,000 extra Datpost-style

casual workers which is used to clear the backlog. Talks in Glasgow are under way over the use of casual staff. But the UCW said as yet no other local talks had broken down.

The progress of the return to work is likely to hinge on votes today at the main sorting offices at London, Liverpool, Manchester and Birmingham. The return to work elsewhere in the country would be significantly slowed should these offices remain on strike.

Local union officials said they could not guarantee that London offices would return to work today. In Chelmsford, the Royal Mail's managing director, called on the union's national leadership to ensure local officials stood by the agreement.

April has already "suffered very badly."

All the courier companies experienced a boom in demand during the strike. The volume of parcels handled by Securicor rose by 40 per cent. Some of its "new" customers have already signed long-term contracts.

Other Post Office customers came to a standstill, the direct mail industry collapsed. The sheer volume of most mail shots meant that there was no short-term alternative for the direct mail companies to turn to.

The industry is now considering longer term alternatives. Mr Brian King, managing director of Bellman Direct, one of the largest companies, is lobbying for an industry-wide feasibility study into the cost of establishing a bulk mailing system.

Yet the most vulnerable part of the Post Office is its existing parcels business. The "economy" parcels will return to the Post Office, but it may be more difficult to recover premium parcels from the courier companies. The Post Office's new SuperService, a special business service introduced in

Fake goods represent up to 6% of world trade

By Richard Donkin

COUNTERFEITING is a worldwide practice which may represent between 3 per cent and 6 per cent of world trade, an expert in the subject told a Confederation of British Industry conference in London yesterday.

Identified only as Soldier E, he said he was the tactical commander of the SAS soldiers on the ground.

He stressed that the rules of engagement and the principle of minimum force had been made clear to his men, who were identified only as Soldiers A to D.

The packed coroner's court in Gibraltar was told Soldier E had instructed his men to issue a warning to the terrorists - Mr Sean Savage, Mr Daniel McCann and Miss Mairead Farrell - but that this could be dispensed with if it was likely to jeopardise the operation.

Their mission was to arrest them but to take no chances.

He denied suggestions by Mr Patrick McGrory, the lawyer acting for the families of the terrorists, that the operation was based on guesswork.

He had told his men the ter-

SAS to 'take no chances' in Gibraltar

By Joseph Garcia in Gibraltar

THE overriding consideration in the operation which ended in the deaths of three IRA terrorists in Gibraltar last March was to protect life, a member of the SAS elite military task force told an inquest into the deaths yesterday.

Identified only as Soldier E, he said he was the tactical commander of the SAS soldiers on the ground.

He stressed that the rules of engagement and the principle of minimum force had been made clear to his men, who were identified only as Soldiers A to D.

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Sunday Times reporters face contempt charge

Four journalists for the Sunday Times, Britain's biggest circulation broadsheet Sunday paper, have been

ordered to appear before the Gibraltar Supreme Court for alleged contempt in their reporting of the inquest into the shooting by the SAS of three IRA terrorists in March, writes Richard Evans.

The summons, served on one of the reporters in Gibraltar yesterday, orders the four to appear before the Supreme Court on September 23 or shortly afterwards.

Mr Roy Greenblatt, Sunday Times associate editor, said the newspaper would contest the allegations. He believed it had adhered to warnings given by Mr Felix Pisarello, the coroner, that the media should beware of possible contempt.

The alleged contempt covers two aspects of the coverage

last Sunday on the front page and in an extended feature inside. One was a prediction of

the detailed evidence to be given to the court by Mr Alan Watson, a Defence Ministry explosives expert, and the other was the comments made outside the court after giving evidence by Professor Alan Watson, the senior crown pathologist.

The four are Richard Ellis, James Adams, defence correspondent, Jon Craig, home affairs correspondent, and Andrew Hogg, head of the Insight investigative team.

was being followed. Mr McCann then moved his right elbow across his body "aggressively." Soldier A thought he was going to detonate a bomb and he shot him in the back.

Miss Farrell made a movement which led Soldier A to conclude she also might be trying to activate a bomb. She was then shot in the back. Mr McCann was shot again, until both were on the ground with their arms away from their bodies.

had an old serial.

The vital seconds before the shooting were described by Soldier A. He said he and Soldier B were following Mr McCann and Miss Farrell.

When he and Soldier B were within three metres of the two terrorists, Mr McCann looked over his shoulder smiling as he spoke to Miss Farrell. He then made eye contact with Soldier A and his expression changed.

Soldier A was immediately aware Mr McCann knew he

was being followed. Mr

McCann then moved his right

elbow across his body "aggressively."

Soldier A thought he was going to detonate a bomb and he shot him in the back.

Miss Farrell made a movement which led Soldier A to conclude she also might be trying to activate a bomb. She was then shot in the back. Mr McCann was shot again, until both were on the ground with their arms away from their bodies.

£300m bid to revive Plymouth docks

By Anthony Morison

A £300m scheme to bring new life to Plymouth's industrial waterfront has been proposed by DML, the company which won a seven-year contract in 1987 to manage the city's Devonport dockyard, and Avatar, the property-development company.

Mr Mike Leece, managing director of Avatar, added the project "would become a blueprint example of the public and private sector working together to achieve real improvements for the local economy."

The Ministry of Defence, which owns a large part of the site, has given a cautious welcome to the proposal which will go before the city council at the end of this month. Leaders of both the majority Conservative and opposition Labour parties have welcomed the suggestions in principle.

A new company would be set up to undertake the development, the first major scheme in the city since it was rebuilt after severe bombing in the Second World War. DML, Avatar and the city council would have shares in the company.

The redevelopment is the first major proposal for the future of the sprawling dockyard since DML took over.

Public and private housing and a range of environmental improvements are proposed.

Timber levy urged to aid rain forests

By John Hunt

THE UK Timber Trade Federation has proposed a surcharge on tropical timber imported into Britain to raise £30m a year to help save the rain forests in the producing countries.

The federation's Dutch counterpart, the Nederlandse Houtbond, has made a similar proposal.

It is hoped other European Community countries and timber-importing nations will follow suit.

Continual reduction in the rain forest is believed to increase the danger of the "greenhouse" effect - the over-heating of the world's atmosphere. It is also thought timber cutting has contributed to flooding in Bangladesh.

Friends of the Earth, the conservation organisation, last night welcomed it as an important victory in its campaign.

Mr Simon Counsell, the organisation's rain forest campaigner, said: "It should be seen as an insurance policy by the trade against the disappearance of an essential raw commodity and the invaluable environmental services provided by tropical forests."

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UK NEWS

Colleges offered company status under reform plan

By David Thomas, Education Correspondent

THE Government is to launch a campaign to persuade further education colleges in England, it was announced yesterday. The plan could include corporate status for some colleges.

Ministers will also give much greater financial and management responsibilities to the colleges which provide work-oriented training for students of 16 years old or more.

The Department of Education and Science (DES) believes some of the colleges, which have an average annual budget of £2.5m each, will take corporate status by registering as companies under the Companies Act. This will give them considerable freedom to enter into contracts and also, in theory, to set their own pay rates for staff.

Further education colleges take in about 1.7m students a year, have an annual budget of about £1bn and employ more than 50,000 staff.

Under the terms of the Education Reform Act, polytechnics and larger further education colleges are to become independent institutions, leaving the smaller further education colleges under local authority control.

The DES yesterday issued local authorities with two circulars laying down guidelines on how these smaller colleges are to be run.

The colleges' governing bodies will have to be smaller than at present and about half their members must represent employers. The Government believes this will attract high calibre local businessmen to

the Confederation of British Industry, the employers' organisation, is planning an initiative to pull half teacher training, which it believes could finance the proposed educational reforms.

The organisation's education and training committee is to consider a paper tomorrow outlining possible ways of ease specific shortages. Such action might include making for greater pay differentiation on a regional and sectoral basis - a proposal which would be controversial with teachers.

Moves might also include initiatives by individual companies to help schools. This may include the encouragement of workers in technical subjects affected by shortages to teach help for early retirees to retrain as teachers and support for efforts to attract those in mid-career into teaching.

Latest figures for applicants to teacher training courses this year show a fall of 7.8 per cent in the number of students wanting to become secondary teachers compared with the same period last year.

Become involved in the colleges, particularly since the colleges are to be given much greater control over their affairs.

In future, local authorities

will work out an annual budget for their colleges based primarily on the number and type of students expected to attend each college.

Colleges will be free to keep most of the income they generate from other sources, such as from training courses for local companies.

Responsibility for the most of the budgets will be handed over to the colleges, which will have more discretion than at present in deciding the staff required, hiring and firing of staff, purchasing arrangements and contracting services such as maintenance to private contractors.

Colleges will be encouraged to run their own bank accounts, but they will not be

allowed to have an overdraft.

They will have to operate within the national pay agreements for college lecturers and other local authority staff, but they will have some discretion over gratings and starting salaries.

However, the DES is suggesting that some colleges, with their local authority's agreement, could form themselves into companies. This would not only make it easier for them to enter into contracts, but it could, in time, allow some to set their own pay rates for lecturers in shortage subjects.

Local authorities must submit proposals embodying these guidelines to the Government for approval. The new arrangements are intended to come into force by April 1990 outside inner London, with inner London following two years later.

• IBM, world's biggest computer company, has announced a software package tailor-made

for schools.

Reuter may shed jobs in savings programme

By Raymond Snoddy

REUTER, the international news and information group, could shed hundreds of jobs in a cost-cutting programme.

Management of the London-based organisation completed a review of all operations in the last few days. Reuter, which employs about 10,000 people, has grown substantially over the past decade in financial information and services.

Mr Glen Renfrew, Reuter's managing director and chief executive, announced the review in July. He said it was prompted by a fall in the company's revenue growth rate because of slower trading room system sales after the stock market crash last October and the strength of sterling.

Reuter said yesterday it did not know how many jobs would be lost because most would come from attrition, redeployment and voluntary redundancy.

Rationalisation will be confined mainly to the relocation of virtually all the operations of Reuter's IDR subsidiary from Long Island, New York, to Chicago. IDR makes components for video terminals and employs about 260 people.

The other areas affected include marketing, development, editorial and administration. There will be what Reuter describes as a few editorial redundancies in London.

None of the 112 bureaux around the world would be closed and the company would not withdraw from any of its present business activities.

Poll tax rebates outlined for 1.2m Scots

By James Buxton, Scottish Correspondent

ALMOST a third of Scottish adults will not have to pay the community charge in full, the Government said yesterday. More than half the country's pensioners will be entitled to a rebate.

Mr Malcolm Rifkind, the Scottish Secretary, yesterday presented details of the rebate system for the charge, or poll tax, which comes into force in Scotland next April - a year ahead of the rest of Britain. He did so on a day of protest

against the poll tax by Scottish trade unions, and in a week which sees important votes by opposition parties on whether to support non-payment of the rebate.

The poll-tax will replace the current rates charged to home owners for community services. The community charge will be a flat rate applied to those aged 16 or over, with closely defined exceptions.

Mr Rifkind said official estimates suggested that 1.2m of

the 1.5m adults in Scotland would be entitled to some form of rebate.

All people on income support would pay the lowest 20 per cent level of the charge. Ability to pay was a fundamental characteristic of the community charge system, he said.

In Glasgow yesterday traffic was briefly disrupted by an 11-minute demonstration timed for 11 am as part of the Scottish Trades Union Congress's protest against the poll tax.

There were small demonstrations in Edinburgh and other cities, and production was interrupted at several factories.

A Mori opinion poll in The Scotsman newspaper showed that 70 per cent of Scots surveyed disapproved of the community charge, 5 per cent fewer than in a similar poll in March. About 32 per cent of Conservative voters said they disapproved.

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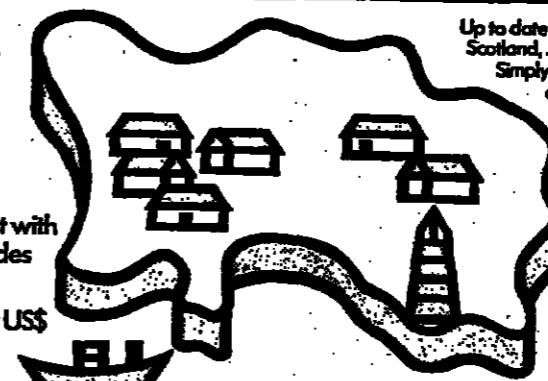
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UK NEWS

Reinforcements for Ulster troops 'ruled out for now'

By David White, Defence Correspondent

TROOP reinforcements for Northern Ireland are being ruled out for the time being, according to top Whitehall officials.

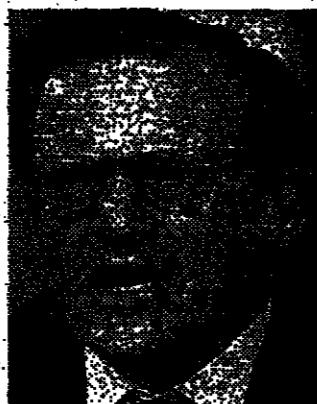
There was no sense in sending extra troops into the province in response to the latest wave of bomb attacks by the outlawed Irish Republican Army unless they had a specific role. A strengthened military presence would simply provide the terrorists with more potential targets, the officials said.

Forces already committed to Northern Ireland could be redeployed in the light of the latest security review. The Government plans to maintain its current force levels, although the last two battalion-strength units sent in to provide extra patrols in 1986 were originally intended as temporary.

Army strength in Northern Ireland stands at about 16,700: 11,200 are regular soldiers and 6,500 are part-time members of the Ulster Defence Regiment. Six of the regular battalions are resident on two-year assignments, and the remaining four are on short tours of a few months.

This is well below the maximum strength reached in 1972, when the combined military force totalled more than 30,000.

The officials also denied that there was any plan to alter the rules of engagement under



King: security review secret

which soldiers may open fire. The "yellow card" carried by all soldiers serving in Northern Ireland - which specifies that they may fire only when their lives or the lives of others are in danger - would not be changed, and the army in the province was "happy to live with it," they said.

The decisions made at last month's security review have been kept secret, but Mr Tom King, the Northern Ireland Secretary, said at the time that some of them would "become apparent shortly." This prompted speculation about troop reinforcements, as the kind of visible gesture that

Unionist politicians in particular have been calling for.

The officials said "a whole range of things" was being considered and some measures were already in place. Whatever arrangements were made, it would be impossible to protect all targets against terrorist attack. But it was possible to take and keep the initiative in the battle against the IRA, "while remaining within the law."

They expressed confidence that the Gibraltar inquest on the killing of three IRA members by a Special Air Services (SAS) commando unit last March would end with a finding of justifiable homicide, but accepted that a contrary outcome would be a big setback for forces serving in Northern Ireland.

The officials denied that Monday's bomb attack against the home of Sir Kenneth Bloomfield, the head of the Northern Ireland civil service, marked a new departure in IRA policy.

They also said they had been expecting the latest series of attacks as consignments of explosives and heavy weaponry, known to have arrived last year, were brought into play by the IRA.

Productivity 'still lags competitors'

By Philip Stephens, Economics Correspondent

THE sharp gains in productivity recorded in British manufacturing industry over the last four years have still left it far behind its main overseas competitor, according to a report published yesterday.

The report, compiled by the PA Consulting Group and the Confederation of British Industry, the employers' organisation, highlights a number of gaps in industry's efforts to maintain the pace of productivity growth.

Analysing the results of a survey of over 800 companies, it says that too few attempt to measure productivity beyond

the immediate "shop floor". The scope for increased efficiency in other areas, such as marketing, sales and administration, is usually ignored.

Only two-thirds of the companies questioned appeared able to measure their overall unit costs, while productivity reporting systems were frequently not used. At the same time productivity-linked bonus schemes often appeared ineffective.

The result is that opportunities for further improvements in efficiency and output are being lost, the survey says.

Around 60 per cent of companies said that they had made

significant productivity gains over the past few years, while most of the others claimed small improvements. The better performance generally reflected a combination of better use of labour and investment in new machinery.

Some 46 per cent of companies, however, acknowledged that in international terms their productivity performance was below average, while 35 per cent classed it as about average and only 19 per cent thought they were near the top of the international league.

In recent years average productivity gains in Britain have been above those of most of its

main competitors.

The average annual growth rate in the years 1983-87 was 5.8 per cent, compared to 5.5 per cent in the US, 5 per cent in Japan, 2.8 per cent in France and 4.6 per cent in West Germany.

But using figures compiled by the Paris-based Organisation for Economic Co-operation and Development, the study says that if those differentials are maintained it would take Britain seven years to catch up with productivity levels in West Germany, eight years to catch up with those in France and over 20 years to catch up with those in Japan.

Trade office widens price inquiries

By Andrew Taylor

THE OFFICE of Fair Trading has widened the scope of its investigations into building material pricing policies.

The trade watchdog has launched separate investigations into the steel trade, suppliers of reinforced steel, heavy lift cranes, thermal and cavity wall insulation and road surfacing companies in Northern Ireland.

The informal investigations follow complaints by construction companies about the price of building materials and construction services.

Last month, the office announced a major investigation into a nationwide web of unlawful price-fixing cartels.

The office, in another move against the pricing practices of building material suppliers, has charged four ready-mixed concrete companies with contempt in the Restrictive Practices Court.

It claims Ready Mix Concrete (Thames Valley), Smiths Concrete, Pioneer Concrete and Hartigan Ready Mix have continued to operate pricing agreements which were placed on the office's register of restrictive trade practices earlier this year.

The agreements affect the companies' operations in Bicester and Banbury.

Amstrad launches high-tech computer

By Alan Cane

AMSTRAD, fast growing UK electronics group, moved firmly into the professional data processing market yesterday with a new family of advanced and aggressively priced personal computers.

The most powerful of the new machines will not be available before early next year, however, because of the drastic world shortage of memory chips which have already forced Amstrad and other computer manufacturers to raise prices and delay deliveries.

Mr Alan Sugar, Amstrad chairman, said yesterday the

company was now badly affected by the shortage of memory chips, known technically as Drams. "It is creating a serious situation for us," he said.

Mr Sugar pointed out the company would normally use 5.5m memory chips every month and was now rationed to only 3.5m.

Amstrad has made a significant departure from its former strategy with the introduction of the 2000 series - the new family of computers. Traditionally, it distributed low-cost IBM-compatible machines and sim-

ple word processors through a variety of channels including dealers and major commercial outlets.

The 2000 family comprises three computers: an entry level model costing (excluding Value Added Tax) between £599 and £1,349 according to configuration; an intermediate model utilising the 286 chip and selling between £999 and £1,699; and a top-of-the-line 386 based model selling between £2,649 and £2,999.

Amstrad also announced a range of high performance video monitors costing from £149 to £499. IBM, Page 23

Dublin and London reaffirm joint stand against terrorism

By Charles Hodgson in London and Our Dublin Correspondent

BRITAIN and Ireland yesterday reaffirmed their commitment to co-operate in the battle against IRA terrorism and expressed support for dialogue between the main political parties in Northern Ireland after the latest round of Anglo-Irish talks in Dublin.

The meeting, called at the request of the Irish Government, follows increased concern on both sides of the border at the renewed upsurge in IRA activity and the shooting by the British army of three IRA "terrorists" in County Tyrone two weeks ago.

Mr Tom King, the Northern Ireland Secretary, who chaired the meeting jointly with Mr Brian Lenihan, the Irish Foreign Minister, said there had been an exchange of views on possible new cross-border security measures but refused to give details.

He said both governments were determined to stand together against the threat posed by terrorism and he expressed appreciation for recent arms finds by the Irish police.

As yesterday's meeting was convened, police in Northern Ireland announced they had uncovered a sizeable cache of

arms and bomb-making equipment in Londonderry.

Irish police also said yesterday they had found an underground bunker used to store explosives near the border with Northern Ireland.

Mr Lenihan said both governments were extremely concerned about the deteriorating security situation but added that increased security measures in the North must be accompanied by political dialogue if progress is to be made in ending violence.

Mr Lenihan cited out-dated demands from Unionist politicians for a suspension of the Anglo-Irish Agreement before they took part in talks. He said both Dublin and London believed dialogue could take place without any aspect of the agreement being suspended and any talks could be conducted in parallel with the agreement.

Mr King said he shared Irish concern that there should be political progress. "I hope there can be sensible dialogue, not the present situation of total freeze and unwillingness to discuss the way forward, and I want to see a more constructive approach," he said.

Before going into the talks, Mr King held a 45-minute meeting with Mr Charles Haughey, the Irish Prime Minister.

IBA plans 20 radio stations

By Raymond Snoddy

THE Independent Broadcasting Authority plans to set up about 20 commercial radio stations in the UK by the middle of next year.

The stations would offer additional services in areas already served by an independent local radio station. The franchises could serve ethnic minorities, "communities of interest," such as specialist types of music, or provide towns with the radio equivalent of a local newspaper.

A plan has been submitted to the Home Office after Mr Douglas Hurd, Home Secretary, invited proposals from the IBA for the development of commercial radio before new broadcasting legislation in 1990.

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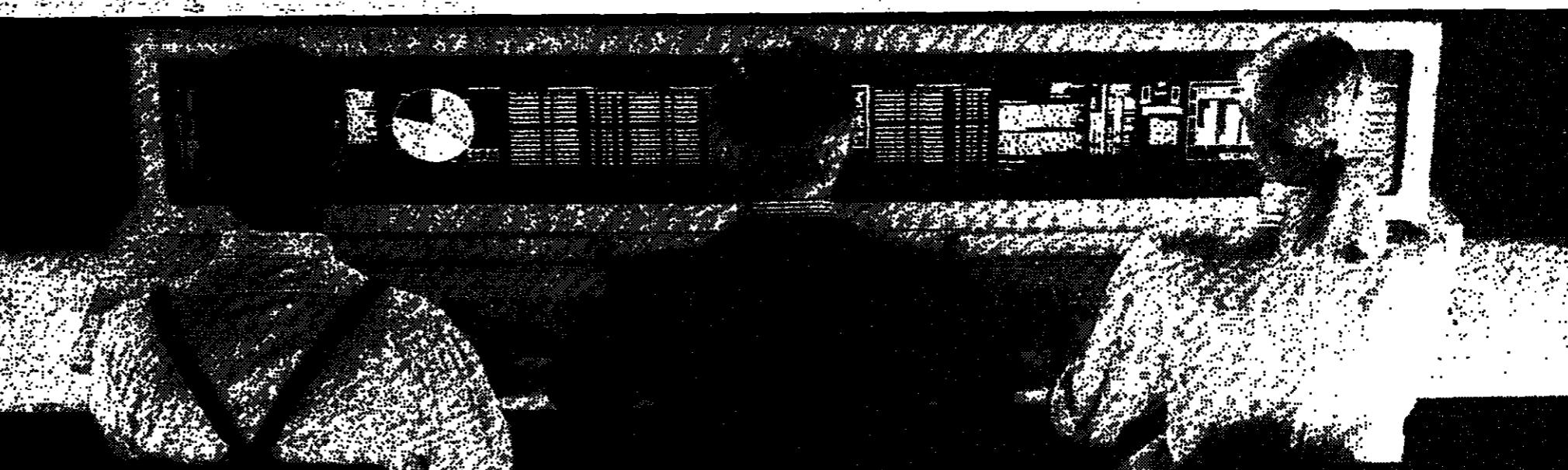
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How graduates fared

By Michael Dixon

WITH the passing of the Education Reform Act, United Kingdom universities will be under unprecedented pressure to show results for their grants of taxpayers' money. That inevitably sharpens the point of the accompanying table ranking the institutions according to the performance of their new UK-domiciled bachelor-level graduates in the summer of 1977. The total number of them coming from each of the largely state financed campus universities is shown by the first column of figures.

Alas, while the table does its best with the data obtainable to give a worthwhile measure, it is a very crude one. The main reason is that it makes no allowance for variations in the mix of courses taught by the different institutions. So the ranking gives an in-built advantage to those with a high proportion of their students taking work-related subjects such as engineering.

The jobs column would, of course, prefer to adjust for variations in subject mix to make the ranking fairer. What's more, the detailed information needed to do the adjusting is stored in the Universities' Statistical Record.

At present, however, it is not available for public scrutiny. Hence the table is as good a measure as is practicable for the moment, although I hope to do better in future years. In any case, since the universities themselves ultimately decide what mix of studies to provide, it can hardly be said that any

handicap they start with in the ranking has been thrust on them entirely from outside. The graduates on whom it is based are those deemed to have their home in the UK who gained bachelor's degrees in the summer of 1977. The total number of them coming from each of the largely state financed campus universities is shown by the first column of figures.

Next we have an enigma. By December 31 last year, when the institutions compiled their reports on what their human products were doing, some of them could no longer be traced. The percentages of the totals whose whereabouts were simply unknown - which vary markedly - are shown by the second column of figures.

Then come the numbers whose whereabouts could be traced at the date in question, and the rest of the table notes the percentages of the knowns engaged in each of three broad types of activity.

The first is full-time jobs. The second is further academic study or training, or other non-practical kind. The last, however, is more complicated.

It includes three categories of people. One is those in short-term work expected to last no more than three months. Another is graduates who were still seeking a job at the end of the calendar year, some six months after winning Warwick.

JOBS

UNIVERSITY	Total of new UK graduates produced in 1987	% who could not be traced as at 31/12/87	No. whose destination unknown as at 31/12/87	% of those whose destination unknown	Long-term work or study or still seeking job as at 31/12/87	Further study or training	Short-term work or still seeking job as at 31/12/87	(Short-term or still seeking job as at 31/12/87)
Brunel	407	4.1	167	40.5	68	18.5	6.8	(7.4)
Durham	1,309	13.7	172	12.7	30.3	8.0	5.3	(10.6)
Aston	741	10.5	93	12.3	6.6	8.1	10.1	(10.4)
Strathclyde	1,340	5.0	122	70.5	21.0	8.5	9.5	(9.0)
City of London	541	4.5	516	94.1	8.4	9.5	9.5	(9.5)
Dundee	516	5.6	167	32.0	30.4	8.6	10.2	(12.6)
Bath	728	2.4	177	76.2	14.2	8.6	10.1	(12.6)
St Andrews	728	5.1	167	40.7	41.2	10.1	10.1	(12.6)
Oxford	2,003	10.3	202	10.0	35.3	10.2	11.8	(12.8)
Queen's, Belfast	1,469	4.2	63	44.1	35.6	10.3	12.8	(12.8)
Aberdeen	1,003	3.5	34	34.0	67.7	9.8	10.5	(12.6)
Southampton	1,406	16.7	237	17.5	21.9	10.8	10.7	(10.9)
Newcastle	1,727	12.1	216	68.2	21.1	10.8	13.5	(12.6)
Heriot-Watt	676	8.4	616	90.1	20.7	11.0	17.7	(12.5)
Kent	861	14.5	736	83.7	26.3	11.5	11.5	(12.5)
UMIST	658	5.7	460	70.2	13.2	11.5	12.5	(12.6)
Glasgow	2,153	23	2,304	57.1	31.3	11.6	12.1	(12.5)
Bradford	947	5.4	380	77.0	34.2	12.2	12.2	(12.5)
Cambridge	2,713	3.9	2,444	83.8	22.6	13.0	13.0	(12.5)
York	865	6.0	516	57.2	20.6	12.2	12.2	(12.5)
Salford	705	11.5	620	72.4	15.3	12.5	12.5	(12.5)
Loughborough	1,079	3.5	1,040	73.9	13.7	12.4	12.4	(12.5)
Reading	1,282	6.2	1,174	85.2	18.1	12.7	12.7	(12.5)
London	8,040	21.5	8,512	84.8	22.5	12.7	12.7	(12.5)
Surrey	649	4.2	525	71.9	15.4	12.7	12.7	(12.5)
Hull	1,108	9.1	1,007	90.8	20.4	13.0	13.0	(12.5)
Keells	671	6.3	535	76.7	13.1	12.5	12.5	(12.5)
Lancaster	1,089	11.5	943	82.2	24.7	13.1	13.1	(12.5)
Leicester	1,089	10.0	980	59.0	26.8	13.3	13.3	(12.5)
Sussex	925	11.5	816	57.1	29.1	13.8	12.1	(12.5)
Birmingham	2,003	14.5	1,784	81.3	24.8	13.8	13.8	(12.5)
Edinburgh	1,800	17.3	1,570	88.8	26.9	14.3	14.3	(12.5)
Sheffield	1,814	7.4	1,689	81.8	23.5	14.7	14.7	(12.5)
Warwick	1,371	8.7	1,262	84.7	20.3	15.0	15.0	(12.5)
Nottingham	1,728	5.1	1,641	81.3	23.6	15.1	15.1	(12.5)
Manchester	2,897	8.7	2,370	83.1	21.8	16.1	16.1	(12.5)
Wales	4,422	4.9	4,206	94.5	30.5	16.1	16.1	(12.5)
Leeds	3,230	5.7	3,200	82.2	22.6	15.2	15.2	(12.5)
Bristol	1,648	4.5	1,574	91.8	21.9	16.5	16.5	(12.5)
Liverpool	1,861	9.5	1,682	82.1	21.3	16.5	16.5	(12.5)
Exeter	1,257	4.4	1,152	86.8	23.2	17.0	17.0	(12.5)
Essex	508	12.6	495	92.0	30.5	17.5	17.5	(12.5)
Ulster	1,505	16.5	1,265	82.8	17.5	16.7	16.7	(12.5)
Stirling	549	3.5	529	93.1	16.1	20.8	20.8	(12.5)
East Anglia	663	11.5	642	93.8	22.1	24.5	24.5	(12.5)
OVERALL	66,730	10.0	60,042	82.2	24.6	13.2	14.3	

* University of Manchester Institute of Science and Technology

STOCK EXCHANGE ADVISOR

The recently established Bahrain Stock Exchange seeks an experienced qualified advisor to report directly to the Director of the Exchange. An immediate project for the advisor will be the development of trading and clearing systems, settlement procedures and follow-up on the implementation of the systems.

Ongoing responsibilities will include the identification and analysis of financial data and reports concerning listed companies, and the preparation of measurement and market trend tools.

To qualify for this outstanding opportunity, the successful candidate should have 10-15 years' practical experience with a leading stock exchange or brokerage firm in the field of financial analysis and systems development. He should also have a working knowledge of worldwide trading, clearing and information systems and computer financial modeling.

The very attractive remuneration package includes a high basic salary augmented by a comprehensive range of benefits.

Applications (which will be afforded strict confidentiality) should be addressed to:

The Director
The Bahrain Stock Exchange
Ministry of Commerce and Agriculture
P.O. Box 5479, Manama, State of Bahrain
Telex 9171 TEJARA BN, Fax (0973) 530455

FAR EASTERN MARKETING

To £45,000

Our client is the investment management subsidiary of a UK Merchant Bank with ambitious plans to expand and develop its range and scope of investment services.

Consequently we would be interested in talking to an experienced Executive capable of leading a team of 8-10 in coordinating its marketing exercise into the Far East. The successful applicant will be aged in his/her early 30's with a minimum of 4 years investment management experience, including unit trusts, covering the Far East and Japan.

MARKETING EXECUTIVE

To £35,000

A major European investment bank requires a talented Marketing Executive to support its established Southern European team. Applications will be considered and in their end to late 20s with approximately 2 years experience of the business, especially side of equity transactions, and should ideally be fluent in both Italian and Spanish.

Excellent prospects with this premier name exist for those with the technical expertise to provide support to an established Group and the potential to develop client lists of their own.

For a confidential discussion please contact Alexandra Hartree or Julian Fox on 01-583 0073 (or 01-584 1685 outside office hours).

16-18 NEW BRIDGE STREET,
LONDON EC4V 6AU

BADENOCH & CLARK
RECRUITMENT SPECIALISTS

Jonathan Wren

SUMITOMO FINANCE INTERNATIONAL

Personnel Officer

Competitive salary, early review and comprehensive benefits

Our client, the international capital markets arm of The Sumitomo Bank, Limited, seeks an experienced personnel professional to run the day-to-day personnel function.

At Assistant Manager level, reporting directly to an Executive Director, this high profile role which involves considerable exposure to top management, is wide ranging but with particular emphasis on recruitment, payroll preparation, benefits administration and staff liaison.

The ideal candidate will be a graduate, aged 28 to 33, holding the IPM qualification and with a minimum of three to four years experience of personnel administration in a banking environment. This challenging position will appeal to a highly motivated individual with an outgoing, self-confident personality seeking a challenging position within an expanding and progressive organisation.

Prospects for promotion are excellent, with the opportunity to progress to Manager and assume additional responsibility within one to two years.

Contact Vanessa Nokes on 01-623 1266.

Just in time

**BARCLAYS de ZOETE WEDD****SENIOR GOVERNMENT BOND SALESMEN**

LONDON AND TOKYO

Barclays de Zoete Wedd, one of the leading UK based international investment banking groups, is seeking to recruit successful bond salesmen for its expanding Fixed Income teams in London and Tokyo.

Openings exist for:

- * Tokyo based salesmen to service Japanese institutions
- other Pacific Region clients.
- * London based salesmen to service Japanese institutional clients both in Europe and London.

Applications are invited from ambitious, team orientated candidates with 3 years' relevant experience. For the Tokyo based appointments, a Gils background would be preferred, as would a knowledge of the Japanese language for salesmen covering Japanese institutions.

These rewarding positions offer exciting and challenging opportunities and excellent career prospects. Highly competitive remuneration packages and attractive benefits would be available to the right candidates.

Applicants should apply in writing with curriculum vitae to: Ann Mohen, Ebbgate House, 2 Swan Lane, London EC4R 3TS, tel. 01-623 2323.

THE INVESTMENT BANKING ARM OF THE BARCLAYS GROUP

**Australian National Line****Managing Director**

Australian National Line is a major transport enterprise and Australia's principal liner shipping and container terminal business. It was established as a statutory authority in 1956 and after a long period of difficult but successful rationalisation it will shortly be reconstructed as a public company wholly-owned by the Commonwealth Government.

Until now the position of Managing Director has been a 5-year term appointment made by the Governor-General. This expires in January 1989. New legislation provides for the appointment of a Managing Director responsible to the Commission for the corporation's overall management and profitable operation. The terms and conditions of appointment, including remuneration, will be determined by the Commission. The position is being advertised nationally and internationally. All applicants will be treated strictly on their merits. The present incumbent is eligible to apply.

ANL operates a container and bulk shipping fleet of 13 vessels, together with multi-user major container terminals in Sydney and Melbourne, smaller facilities in other Australian ports and ancillary land transport services. In addition to its extensive agency business in Australia, it has representative offices in London, Singapore, Hong Kong and Tokyo. It has a total of 2,400 employees in Australia, at sea and abroad. Total assets are valued at over \$4300 million and annual revenue is \$A200 million. All major divisions operate in profit.

The Commission is determined that ANL's business should continue to grow by capitalising on a number of challenging commercial opportunities. A mature, outstanding chief executive with drive, enthusiasm, strong interpersonal skills and leadership is sought to take this business into the 1990s and beyond. As the successful applicant will be appointed to the Board, a strong record of management experience in large, capital-intensive businesses will be essential, as will a sound record in employee and industrial relations. Candidates should preferably be experienced in international trade, demonstrate high levels of conceptual and analytical ability and be capable of developing the strategic thrust of the organisation.

Written applications should be received by Friday, 14th October, will be treated in the strictest confidence and should be addressed to Mr. I. D. Cordner, Concourse King Warburton & Co., 4th Floor, 525 Collins Street, Melbourne, 3000, Australia.

In April 1989, the Polytechnic is due to be established as an independent corporate body outside the control of the Local Authority. It will own the land, buildings and equipment, and employ the staff. As part of our preparations for this major change, we are seeking to appoint an experienced finance professional to fill the new post of:

HEAD OF FINANCE**£22,000-£25,347 p.a.**

(Pay Award Pending)

You will need to be a qualified accountant, with the background and experience which will enable you to provide a high-level comprehensive financial management service to a developing organisation with an annual turnover of about £30m and extensive City-centre capital assets. As well as ensuring that all financial affairs of the Polytechnic are properly planned, managed and controlled, you will provide the senior professional advice in both strategic and operational terms necessary for the maximisation and effective utilisation of the Polytechnic's financial resources.

If you are also energetic and entrepreneurial, able to manage and lead a group of committed staff, keen to respond to the changing role and needs of a Higher Education Institution, and motivated to make an impact on a progressive and exciting organisation, then this post will be of interest to you and you will be of interest to us.

As well as a competitive salary we can offer relocation expenses up to £3,000 where appropriate.

Ref. No. CA1044/88

Details and application form available from Personnel Officer. (Please enclose a large self-addressed envelope). Telephone 0203 823032 or 823061. Closing date: Friday, 30th September, 1988.

We welcome applications from women and men regardless of disability, race or marital status.



Coventry Polytechnic
Priority Street
Coventry CV1 5FB
Tel: (0203) 631313

INTERNATIONAL APPOINTMENTS**SENIOR INTERNATIONAL EQUITIES ANALYST**

Well respected Wall Street Investment Banking firm, a pioneer in dealing in international shares with U.S. institutions, seeks an experienced and dynamic International equities analyst.

Ability to analyse and convey timely investment ideas to salesforce and principals throughout the U.S. and Europe.

High pay commensurate with experience and potential. Must be willing to relocate to New York. Send resume in confidence.

Write to Box A300, Financial Times, 10 Queen Street, London EC4P 4BY

Major International Asset Management Organisation**Fund Manager**

As part of its more general expansion plans, the asset management subsidiary of a prominent and well-established international insurance group wishes to recruit a Fund Manager.

This attractive role will involve actively managing a fully mixed fund (currently standing at £175m), approximately 70% of which is in UK and international equities. In addition the successful candidate will be a member of a team responsible for corporate client presentations, complementing an existing marketing effort.

Preference will be given to those who are able to take an independent line and contribute new ideas whilst functioning in a strong team environment. Applicants should also be in their early to mid 30s and have a minimum of 3-4 years' prior experience of managing similar funds.

The salary will be fully negotiable and include a generous benefits package.

Interested candidates should write to Andrew Stewart at the address below enclosing a comprehensive C.V. or telephone him on 01-248 3653 (01-385 9616 evenings/weekends), or use our confidential fax line on 01-248 2814.

All applications will be treated in the strictest confidence.



Tel: 01-248 3653/01-489 8070

CONSULTANTS IN RECRUITMENT

Part of Credit Lyonnais since November last year, CL-Alexanders Laing & Cruickshank (CL-AL&C) has been designated as the base from which Euro-equities will be developed as part of a global strategy to extend the Group's presence in Capital Markets, through a growing worldwide network of specialised financial branches and subsidiaries.

CL-AL&C's strength in UK equities and Credit Lyonnais' global coverage in Equities together provide a solid foundation for the building of an internationally-minded team to research and sell both UK and European equities into Europe, and European equities into the UK.

To achieve our objectives in Europe we need people in:

RESEARCH

You should have a minimum of two years' experience in German, German/Swiss or Spanish equities.

SALES

Here you will need at least two to three years' experience of selling UK and European equities or equity-based products into Europe, or European equities into the UK.

As well as the normal range of benefits offered by a large, international financial institution, salaries will be fully competitive and will certainly be attractive to more experienced candidates whom we are particularly keen to recruit.

Please write with full c.v. to: Liz Knott, Manager – Personnel Services, CL-Alexanders Laing & Cruickshank, Bucklersbury House, 11 Walbrook, London EC4N 8EL. Tel: 01-256 0667.

Are you experienced in

EURO EQUITIES RESEARCH/SALES?

then our business plan can include your career development

CITY

CL-Alexanders Laing & Cruickshank

A MEMBER OF THE CREDIT LYONNAIS GROUP

STOCKBROKING

Waters Luniss, the successful Norwich Stockbroker, will shortly become an important subsidiary of Norwich and Peterborough, the East of England's premier building society.

This will give Waters Luniss an outstanding opportunity to expand their business, creating exciting opportunities for new staff at their head office in Norwich and selected branches across East Anglia.

Applications are invited from Members, Registered Representatives or those close to qualification who are experienced in private client management, either discretionary or non-discretionary.

Your own business is not essential, but a clear desire to participate and contribute fully to the potential of this unique stockbroking opportunity must be demonstrated.

Career prospects are excellent, with income packages reflecting experience, ability and performance.

If you are interested in pursuing these opportunities, please contact John Luniss on Norwich (0603) 622265 or write to him at:

WATERS LUNISS

Waters Luniss & Co. Ltd., 5 Queen Street, Norwich NR2 4SG.
Telephone: Norwich (0603) 622265.

All applications will be treated in the strictest confidence.

Waters Luniss are Members of the International Stock Exchange and The Securities Association.

YOUNG HIGH-CALIBRE BANKERS

As a result of the continuing expansion of our West End Branch, we have vacancies for **MANAGERS ASSISTANTS** and **SECURITIES CLERKS**.

We are looking for experienced, ambitious bankers of high calibre to fill these posts. Candidates, who are likely to be in the age range 20-28 should have completed, or be about to complete, the ACIB examinations. Initiative and the ability to work with the minimum of supervision and under pressure are also important factors. The work will be varied and stimulating, involving mainly corporate lending to a wide range of businesses.

These jobs offer the opportunity to join a young team in an expanding branch network with the likelihood of rapid promotion to more senior positions for the right individuals. We offer a competitive salary together with all the benefits associated with a major bank. We would expect the successful candidates to achieve significant salary progression within the next few years.

Replies, enclosing a detailed curriculum vitae, should be sent to:

Mrs. Anne Dunford,
Manager – Personnel Department,
Hill Samuel & Co. Limited,
100 Wood Street,
London EC2P 2AJ



HILL SAMUEL & CO LIMITED

A member of the TSB Group.
A member of the Securities Association.

INVESTMENT MANAGEMENT

ACA's

Professionalism City Exposure Training Variety

These are just some of the attractions of IMRO (Investment Management Regulatory Organisation Ltd) for the professionals currently in the IMRO team. IMRO now seeks to appoint a number of qualified ACA's to further complement its inspection and investigation staff.

IMRO has developed a strong dynamic team of professionals in preparation for its role as a Self Regulating Organisation centred upon regulation of Investment Management ranging from the major merchant banks to smaller independent concerns. This is a unique opportunity to gain first-hand knowledge of the sector.

These positions will be of interest to top calibre ACA's looking for a challenging and high profile role. IMRO pays competitive city salaries with a benefits package which includes mortgage subsidy.

For further details please contact Paul Wilson or Penny Bramah on 01-404 5751 or write enclosing a curriculum vitae to Michael Page City, 39-41 Parker Street, London WC2B 5LH.



Michael Page City

International Recruitment Consultants
London Paris Amsterdam Brussels Sydney

Corporate FX Salespeople

Highly Competitive Package

Our client is one of the world's leading banking organisations with a powerful and highly profitable treasury function. Its reputation in this area is of the highest standard and as a result of its continued success in London seeks to recruit two additional corporate dealers.

The successful candidates will be educated to at least 'A' level standard and be experienced in foreign exchange (spot and forward), money, markets, securities and options. They will have the maturity and personal qualities necessary to build and retain customers on behalf of the Bank. A second language, ideally



Michael Page City

International Recruitment Consultants
London Paris Amsterdam Brussels Sydney

German, would be advantageous though not essential.

If you have the technical experience, the ability to sell and market, and a high level of drive, these positions offer the opportunity to join an outstanding operation committed to profitable expansion.

Interested parties should contact Nick Root or Nick Bennett on 01-831 2000 (evenings 675-6384) or write enclosing full C.V. to The Treasury and Investment Division, Michael Page City, 39-41 Parker Street, London WC2B 5LH.

FINANCIAL OPPORTUNITIES

MULTI CURRENCY EUROBOND TRADER
Candidates must have good trading experience in Sterling, Guilders and Deutsche Mark Euros. Please call Karen Gray for further information.

FUTURES TRADER
Good experience required of trading all instruments. Candidate must be an excellent work record. Please call Richard Ward.

SENIOR MANAGER
Fixed Income. Excellent opportunity for person with strong personal contacts. Fixed Income sales to UK Institutions. Set up and develop a team. Major investment house. Please quote ref DF/443.

EUROBOND SALES
Minimum 3 years sales experience required for reputable House. Good UK institutional client base essential. Please ring Karen Gray for details.

CANADIAN DOLLAR TRADER
Good experience trading Canadian Government Bonds. Quality House. Please call Richard Ward.

SALES - EUROPEAN EQUITY SALES
To UK - Fluent French, experience with Equities sales preferably European. Large international house. Please call quoting ref DF/310.

AUSTRALIAN EQUITY SALES
Candidate must have good UK client base and two years experience in Australian equity sales.

ECU TRADER
About 2 years experience in trading of ECU's. Please call Richard Ward.

SALES - EUROBONDS
Must have fluent German with experience selling Bonds to European/German institutions. Ref DF/622.

CANADIAN DOLLAR EUROBOND SALES
Quality House seeks Canadian dollar sales people with good European client base. Please call Karen Gray.

01-377 6488
Cambridge Apartments
272 Shoreditch High Street, London E1

01-377 6488

Senior Sterling Dealer

City
Attractive salary package
with Company Car

Enhance your dealing scope by applying your skills to our growing Dealing team at the London Branch of this leading Austrian bank.

If you are aged between 30-40 and have at least five years' experience in all aspects of the domestic sterling market also using forward cable and arbitrage skills, you may have what it takes to further develop our already profitable sterling book.

With your all round knowledge of the sterling money markets and products you will work within the money market team and report direct to Chief Dealer. We think the excellent remuneration package we offer is likely to attract the right candidate.

Applications, in confidence, are therefore invited in writing with full curriculum vitae to Rosemary Jordan, Manager - Personnel, Girozentrale Vienna, 68 Cornhill, London EC3V 3QE. The closing date for receipt of applications is 26th September (No Agencies please).

Girozentrale Vienna

BANK

Major International Asset Management Organisation

Head of Research

Following a decision to further expand its existing asset management arm, this prestigious international insurance group has decided to establish an in-house research capability, which has created the need for a Senior Researcher.

It is vital that applicants have strong man-management skills, as the role entails responsibility for recruitment and the structuring of this new department. The intention is to develop a hard core of analytical talent responsible, not only for monitoring broker material, but also for developing original research.

This unique opportunity to develop an innovative unit will be attractive to candidates from a broad range of backgrounds. Those of particular interest to our client will currently be sector specialists who desire exposure to a wider market; Fund Managers with a strong analytical bias and a desire to specialise in research; or generalist equity researchers.

Salary will be negotiable and dependent upon a combination of career record and future potential.

Interested candidates should write to Andrew Stewart at the address below enclosing a comprehensive C.V. or telephone him on 01-248 3653 (01-385 9616 evenings/weekends), or use our confidential fax line on 01-248 2814.

All applications will be treated in the strictest confidence.



Tel: 01-248 3653/91-489 8070

CONSULTANTS IN RECRUITMENT

SPOT DEALER

As part of a planned expansion of its Treasury operations my client, a leading British Merchant Bank and Accepting House, is seeking to recruit an additional dealer to strengthen its established dealing team.

Candidates, aged 25 to 35, should have been dealing for not less than three years and have current experience trading spot Dollar/Yen.

Competitive terms will include negotiable salary, bonus and a full range of banking benefits.

To discuss this position in complete confidence please telephone:

Terence Stephenson
Prince Rupert House
9/10 College Hill
London EC4R 1AS
Tel: 01 248 0263

KIM ENG SECURITIES

We require experienced institutional Sales people with specialised knowledge of the Singapore/Malaysian and Hong Kong market in our London Office.

An attractive salary and benefits package will be offered, commensurate with experience.

Please forward a curriculum vitae to:
Andrew Hobbs, Kim Eng Securities (Private) Ltd., 37 Park Street, London W1Y 3HG

SINGAPORE

LONDON

HONG KONG

Private Banking Executive

c.£30,000p.a.,
plus Car and
Banking Benefits

The Hongkong and Shanghai Banking Corporation, one of the world's leading international banks, is seeking to recruit an executive to join the London office of the group's global private banking network.

The position will include responsibility for marketing the bank's extensive range of services to an international client base, managing existing accounts and developing new business relationships with high network individuals.

Candidates, aged about 30, will have a full knowledge of investment management, tax and estate planning, preferably gained within the private client division of an international bank. Strong personal qualities, particularly self-motivation, determination and initiative are essential to assist the development of new business opportunities. In this context, overseas marketing experience would be an advantage as the role will involve foreign travel.

In addition to the salary indicated, an attractive benefits package includes non-contributory pension scheme, car, mortgage subsidy and BUPA.

Please write enclosing full personal career details to: Mrs Sylvia Keats, Personnel Department, Hongkong and Shanghai Banking Corporation, 99 Bishopsgate, London EC2P 2LA.

HongkongBank

The Hongkong and Shanghai Banking Corporation

Structured Finance £ Negotiable

A well-known progressive international bank with a significant and growing presence in the London market seeks to recruit a key member of their leveraged finance team. The bank targets medium-sized U.K. corporates and provides innovative solutions to client problems on a fee-earning, transaction oriented basis. The structured financing department will liaise closely with the corporate finance and banking teams but has full responsibility for sourcing, structuring and negotiating deals.

The ideal candidate will be a graduate



Michael Page City

International Recruitment Consultants
London Paris Amsterdam Brussels Sydney

with several years' relevant experience in a merchant or commercial bank. A sound credit training is important as is a thorough understanding of cashflow based funding. Exposure to the structuring and negotiating of leveraged finance deals is essential for this exciting and influential role.

Interested candidates should contact Mark Hartshorne or Niall Macnaughton on 01-404 5751 or write to them at Michael Page City, 39-41 Parker Street, London WC2B 5LH. (Fax No. 01-831 2612).

Job, no tip

Corporate Finance Executive Oil & Gas

Morgan Grenfell & Co. Limited, a member of The Securities Association, is seeking an Executive to join its Energy Group which is situated within the Corporate Finance Division. This Group provides advice to oil industry clients regarding acquisitions and divestments, asset based financing and other financial advice. The role will involve research, analytical and valuation work, as well as considerable client contact.

Applicants should be aged under 30 and have 2-5 years experience of cashflow evaluation and a knowledge of the UK oil taxation regime, probably acquired in the oil industry or in the financial sector.

The remuneration package will be highly competitive and will include a preferential mortgage scheme, non-contributory pension scheme and private medical cover.

Applications, including full personal and career details, should be sent to:

Miss G. Nash
Morgan Grenfell & Co. Limited
23 Great Winchester Street
London EC2P 2AX

**MORGAN
GRENFELL**

**BAYNARD
SECURITIES
(LONDON)
LIMITED**

**MEMBER OF THE
SECURITIES
ASSOCIATION
MEMBER OF THE
INTERNATIONAL
STOCK EXCHANGE**

We are keen to expand our private client business and would like to talk to brokers with existing client base. Efficient external clearing service in place.

Please call:
**ANTHONY BALME,
LUCIAN MIERS
OR
GAVIN FLAXMAN**
75 Carter Lane,
London, EC4V 8EP
Telephone Number:
01 236 6224

Assistant Directors and Managers

CORPORATE ADVISORY DEPARTMENT

Our advisory team is one of the most active in the City. Recent work for clients includes advising Irish Distillers, Pleasurama, Beazer, Nestle, Harris Queensway, Tomkins, Ward White and Sandell Perkins on major public transactions.

The growth of our business means that we are now looking for executives with at least two years' Corporate Finance experience who can contribute to some of the most exciting and imaginative transactions in the City.

Apply in confidence to:

**David Reed
Managing Director
County NatWest Limited
Drapers Gardens,
12 Throgmorton Avenue,
London EC2P 2ES
Telephone 01-826 8366**

COUNTY NATWEST

© The NatWest Investment Bank Group

Senior Banking Appointments

London Bank

£60,000 plus benefits

We are seeking to fill two of the most interesting and challenging senior banking appointments in the City of London.

Our client is a well-known, foreign-owned London bank serving the needs of clients engaged in international trade and development.

A recent review of future business strategy has identified changes required to increase the bank's competitive position. As a result two Deputy General Managers are to be appointed to manage two key areas of the bank.

The Deputy General Manager - Operations

will have responsibility for the operations and finance functions, and for managing the process of change in these areas.

The Deputy General Manager - Business Development

will have the overall task of expanding the range and sophistication of the bank's products and services and delivering these to clients in an innovative and profitable way.

Both these positions require persons with well developed management skills, familiarity with the international banking field, and the ability and energy to take on new challenges in a changing environment.

These senior appointments will command salaries of £60,000, supplemented by a full range of banking benefits.

If you wish to apply for either of these positions please write - in confidence - enclosing a CV to Douglas Austin, ref. 7041/7042. Alternatively telephone 01-487 5000. Fax: 01-487 4374/5.

MSL International (UK) Ltd, 32 Aybrook Street, London W1M 3JL.

Office in Europe, the Americas, Australia and Asia Pacific.

MSL International

Corporate Finance ACA's & Solicitors

Our client, a leading U.K. merchant bank, has an active and highly innovative corporate finance department.

Continued expansion has created opportunities for young, high calibre professionals with first class academic backgrounds and lively personalities to join its corporate finance division.

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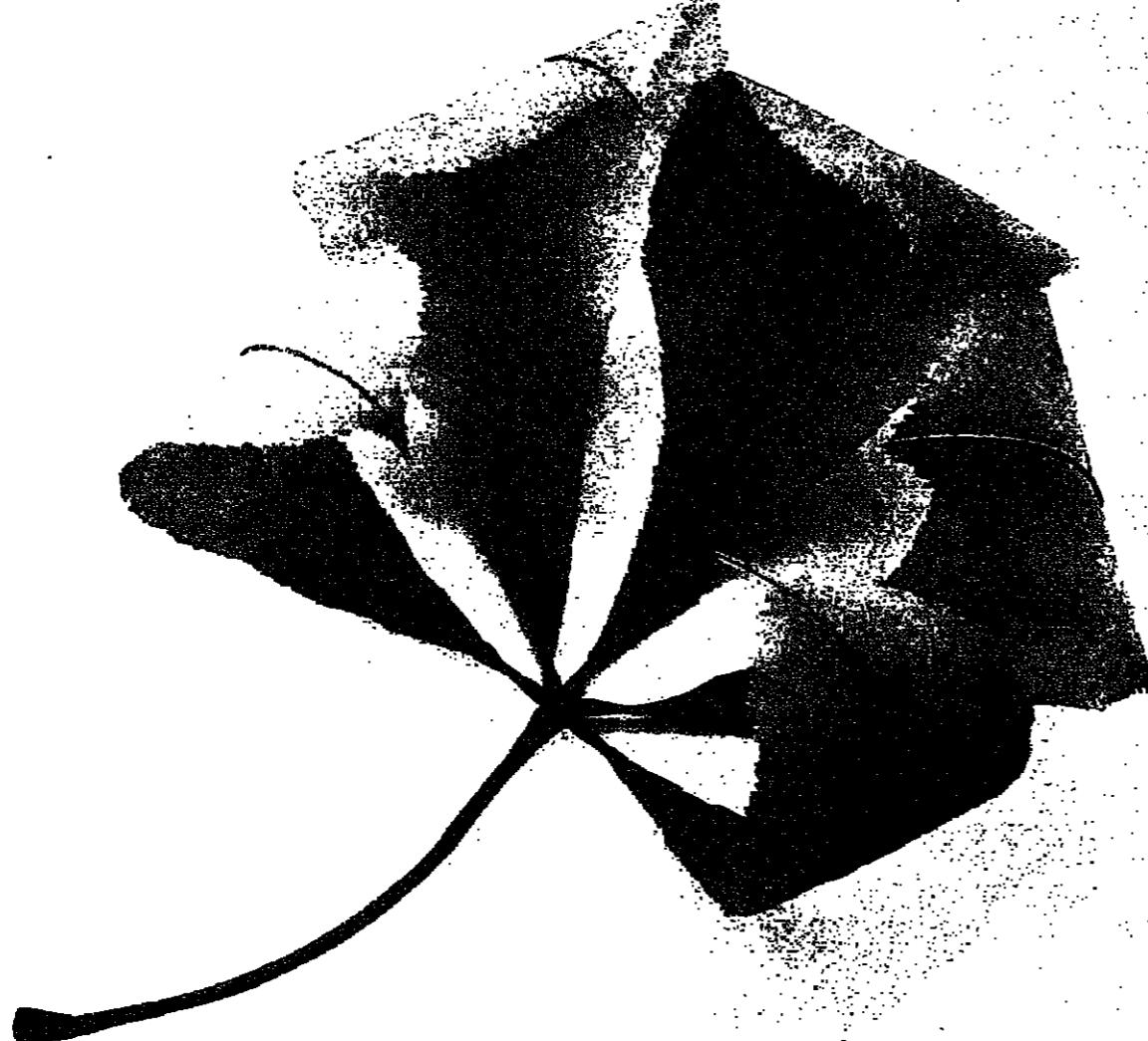
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CONTRACTS

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The 5,100 tonne compression deck will be fabricated, fitted out, tested and commissioned at the Howdon Yard at Wallsend. Construction will start in October with completion and loadout programmed for May 1990.

A fully integrated structure, the deck will have four levels - cellar, mezzanine, main and air cooler - with the three gas compression trains on the main level. The other levels will mainly carry process, power, control, services and safety systems. A crane will be integrated into the structure.

As part of the contract Press will also construct a 25 metre long bridge to link the compression deck to the production deck at the offshore location. Press Offshore is part of AMEC, the international construction and engineering group.

WEIR ENGINEERING PTY, the Australian subsidiary of the Weir Group, has won an order from the State Electricity Commission of Victoria to design, supply and install six boiler feed pumps for Long Yang "B", a 2 x 500 MW coal-fired power station in the Latrobe valley, Australia. Worth over £13m (nearly £2.5m), it is the fourth major contract awarded to Weir Engineering for work at Loy Yang "B" and brings its total order value to nearly £32m (almost £5m). The pumps and motors will be manufactured under a co-production agreement between Weir Pumps and Weir Engineering in Sydney, and will be fully tested in Glasgow. The pumps are to be installed on a 200-tonne concrete plinth, which will be completely fitted out off-site before being lifted into place on spring supports on the turbine hall floor.

A contract worth about £6m has been awarded to SD by the Ministry of Defence for a Computer Net Radio Management Information System (CRIS) for the British Army. SD is the newly-formed government, defence and aerospace business within SD-Sicon, which was created by bringing together the relevant parts of Systems

and Services, Parkgate, Kent. The £6m investment of the exterior of four blocks of flats in the London Borough of Wandsworth. Work has started and is due for completion in May.

The first conversion of an office building at Lombard House, Purley Way, Croydon, into 56 separate units is also underway. The project is due for completion in January.

The first £1m construction of a four-storey office building with air-conditioned open plan floors and a central core with lift shaft, stairs and toilet is being built for London & Commercial Properties at 37-39 Pittfield Street, London, N1. Work is due to finish in June.

For the London Borough of Barnet, a £750,000 refurbishment contract covers about 300 houses at Watling Estate, Edgware. Work is due for completion in March.

A £750,000 upgrading of offices for British Telecom at Broadway House, Bromley, High Street, Bromley, is due to finish in December, while at

Selby Road Community Development, Selby Road, London, N17, a £900,000 refurbishment for Grindess Mahon Developments involves adapting a school to community requirements, refurbishing and lift instal-

Computer training

The Central Electricity Generating Board has awarded an £8m contract to MARCONI SIMULATION for the computer hardware and software for a simulator to train operators for Britain's first pressurised water reactor nuclear power station.

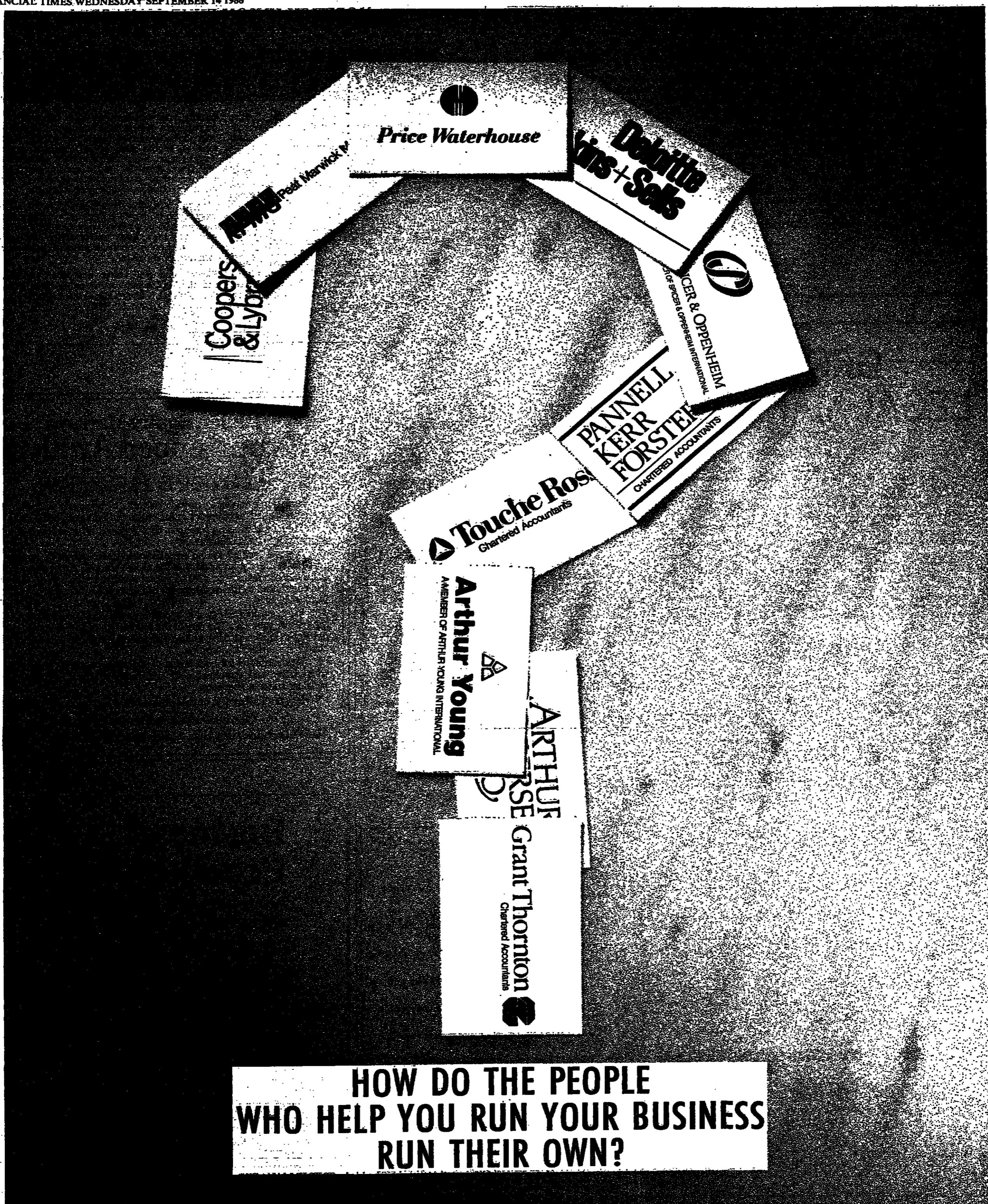
The simulator will be installed at the proposed PWR training centre on the site of Cliff Quay power station at Immingham. The simulator will be used to train staff associated with the Board's PWR programme in both normal and emergency procedures - well before the first PWR currently under construction at Sizewell, Suffolk, becomes fully operational in 1994.

It will provide a training environment capable of meeting the Board's requirements. The contract was won on the basis of Marconi Simulation's proprietary parallel processing approach, which has been used on previous power plant simulators.

Manufacture of the simulator will be carried out at Marconi Simulation's plant near Dunfermline, Fife, and will employ 30 specialist Marconi engineers until its completion in 1991. The work will be project-managed by the CEBG's generation development and construction division.

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ARTS

TELEVISION

Have your bias and eat it

Christopher Dunkley wraps up the summer season

One of the most impressive, though surprising, successes of the generally tedious summer season which is now ending was *The Incredible String-Filz Show*, a six-part series produced and directed by Andy Haynes and presented by Jonathan Ross on Channel 4. The subject was cult movies and their makers, and the final programme on Friday, which featured Russ Meyer, "King of the Nudies," was a prime example.

Success sprang mainly from the nice balance achieved between fan-style enthusiasm and journalistic incredulity/dismay. Ross embodied this, managing to sound on the one hand well informed and on the other hand mildly amused at the excesses. Haynes injected a powerful sense of style, filming his presenter on locations which chimed harmoniously with the subject matter.

During the Meyer episode he had Ross arriving at a deserted drive-in cinema to watch the black-and-white movie "Faster Pussycat, Kill! Kill!" in the very car featured in the movie, and accompanied by the amazing female star, whose name sounded like "Yours Satana." It was one of those rare programmes which both entertained in its own right and told you things you did not know: who would have dreamed that "Beneath The Valley Of The Ultra-vixens" was funny?

The endlessly discussed revolution in BBC journalism seems to be taking an unconscious turn arriving on screen. Michael Checkland was appointed Director-General more than one and a half years ago, and his deputy, John Birt, who was brought in specially to spearhead the revolution, has now been around long enough to have been succeeded in the post of Director, News and Current Affairs by Ron Neil. Yet still you would need a magnifying glass to discern any changes in the output.

True, BBC1's new weekly programme about politics, *On The Record*, begins at lunchtime this coming Sunday, but it will be presented by one of the Dimblebys which does not sound too tremendous revolution. That is mid October.

The Money Programme is due to adopt a new look and a new format* which probably means that the set has been re-painted. *Newsworld* is still promising a fixed start time of 10.30, and we are told that regular viewers will have noticed the programme is "more sharply tuned." This regular viewer has noticed a tendency to spin out the main item to about twice the ideal length, but otherwise little change - though Gavin Esler has been proving an impressive anchorman while some of the regulars have been away.

The only other hint at "the new journalism" that I have noticed recently were the words delivered over pictures of violence on a postmen's picket line during the Nine O'Clock News last Friday: "Although these pictures are not typical of the strike as a whole . . . Remembering Mr Birt's 'Bias Against Understanding' arguments about television journalism, with its strictures on the misleading nature of some pictures, this seems like a way of having your bias and eating it."

Five minutes of Anne Robinson's Saturday morning show on Radio 2 proved how much television commercials are

now dominating the pop music business. Switching on during a late shave, I found myself in the middle of what I had thought was solely an advertising jingle: "It's easy, easy like Sunday morning" (which seems to be the complete lyric). This snatch of music is just one of a million for a plastic cashpoint system - precisely whose is anybody's guess - in which a young man leaves his fist in a converted docklands warehouse and collects money from a hole in the wall to buy milk for his cat and a newspaper for himself.

Miss Robinson followed that with "He isn't heavy, he's my brother," a hit by The Hollies nearly 20 years ago, which has now re-entered the charts thanks to its use on the bill.

Now, in his new BBC2 series *Floyd on Britain And Ireland*, he is being turned into another screen loon like Burke, Bellamy and Pyke. Not content with the natural occurrence of his idiosyncrasies, television is busy injecting so many "funnies" that the original intention of the programme is in danger of disappearing. The first episode began on a windswept hillside with a series of hats being thrown to Floyd from off-screen, and went downhill from there. If he is not careful he will be reduced from an admirable presenter of food programmes to a run-of-the-mill millionaire presenter of breakfast shows.

*

Ridicule has occasionally been poured on television people by this column for their complaints about the supposedly low level of television criticism in the press. When you consider their own pitiful record in criticism generally (the whole of British television supports just one professional critic that I know of, Barry Norman) and their near total failure to act as a public watchdog over the press, the hypocrisy seems mind-boggling.

There is just one highly enjoyable little programme which, for more than 30 years, has kept an eye on Fleet Street: Granda's *What The Papers Say*. Even here, of course, television's habit - as with every thing else from books to ballet - has been to borrow his critics from the newspapers (I presented *The Papers* once myself). Yet it's very rarely as well as it has been given to a particular value. It was, consequently, saddening to see that Michael Grade had decided Channel 4 would scrap it. Richard Ingrams, one of the programme's best presenters, went to Manchester with a black tie to present the last ever . . . and discovered that TV, where the series began in 1956, was readying to do it.

The first thing you don't do is find a presenter who looks like a state-of-the-art polytechnic lecturer with a Zapata moustache left over from the sixties and . . . all the speech cadences of . . . Alan Whicker who . . . takes his breath . . . pauses in the most . . . illogical places.

The next thing you don't do is wheel on an American female lecturer to talk about the emergence of "mass media" in Victorian London. Above all what you don't do is claim to be dispelling fiction when you yourself are about to offer up a wild eyed theory about the entire Ripper affair being invented in the West End press and the gentlemen's clubs.

Television's pestiferous instinct to gild the lily is run-

ning one more promising talent. When Keith Floyd began presenting programmes about food, not all that long ago, it quickly became clear that he was one of those rare television naturalists who can communicate via a camera as easily as most people can over a garden fence. It is, in fact, one in a million who can learn. Moreover Floyd had an attractive sense of humour, and an endearingly human combination of conceit and self-deprecation. His remarks to the cameraman and about his producer added an unusual touch of "demystification" to his programmes, and his genuine enthusiasm for food was contagious.

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Now, in his new BBC2 series *Floyd on*

FINANCIAL TIMES

BRACKEN HOUSE, CANNON STREET, LONDON EC4 P4BY
Telegrams: Finantimo, London PS4. Telex: 8954671
Telephone: 01-248 8000

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Social gloss on 1992

THE MOVE towards a single European market is a development that trades unions are bound to regard with mixed feelings. The initial shock to the industrial structure, as competition increases and production is concentrated to reap economies of scale, is bound to hit older industries where the unions are well entrenched. At the same time the collective bargaining power of nationally based unions may be eroded by the increasingly free movement of goods, capital and services around Europe.

It is ironic, then, that the British labour movement should finally be warming to the European ideal when the single market is the main item on the Community agenda. And it says something for the advocacy of Mr Jacques Delors, the European Commission's president, that he is now persona grata with the once reluctant Europeans of the Trades Union Congress. His call for a social dimension to the unified market was greeted with a remarkable degree of enthusiasm at the TUC meeting in Bournemouth last week – an enthusiasm no doubt enhanced by the knowledge that the call was going down badly in Downing Street, where union influence has long since been banished.

Liberalisation

At the political level Mr Delors' move to win the backing of Europe's unions may have some logic as a way of sweetening the pill of liberalisation. There will be enormous problems of adjustment, which require thinking about now. Yet his suggestion that the labour movement has "a major role to play" on the road to 1992 raises a fundamental question. If part of the boost to European growth is expected to come from rapid changes in industrial structure, how constructive a role could the unions really be expected to play?

With the removal of remaining barriers to trade and the lifting of capital controls, 1992 is creating the conditions for monetary union. Monetary union would imply a single European monetary policy and perhaps a single currency. The implication is that the depressed regions of Europe would no longer be able to

Flexibility

Thus the impact on labour market flexibility of any European directive reflecting the social dimension of the single market – "social space" as it is called in Brussels – is clearly important. If Mr Delors' initiative opens the way to Europe-wide collective bargaining, as some TUC leaders hope, it will fly in the face of the logic of the single market 1992 is not about extending West German wage levels in exchange for British productivity.

Yet there is nothing in the programme outlined to date to suggest that this is what the Commission is really seeking. The emphasis instead is on workers' living and working conditions, health and safety, life long education for workers and a workers' right to be covered by collective agreement. There are several practical proposals to increase labour mobility such as the move to make unemployment benefit transferrable between countries.

As for worker participation, the far-reaching approach in the abandoned Vredeling proposals is absent. The current suggestion is that participation should only apply to companies that opt for European, as opposed to national, corporate status under a new company statute; and the managers would be allowed to choose between different forms of participatory structure. But in view of the very different traditions in labour relations around Europe, even this conditional creep towards partnership will run into strong opposition, not least in Britain.

All this suggests that Mr Delors' rhetoric may be more potent than his social package. But if he manages to engage the unions constructively in coping with the fall-out from 1992, so much the better.

Incentives for rented housing

THE INFLOW of money over the last two weeks into rented residential property companies, attracted by the new tax breaks under the Business Expansion Scheme (BES), has far exceeded the Thatcher Government's expectations.

Investment in rental property through the scheme during the current tax year is now expected to run ahead of the Government's estimates of £125m by a factor of up to four.

Even such sums, translating into the purchase of 20,000-30,000 houses and flats per year, are small when compared with the size of the UK's housing stock, valued at about £850bn. But the effects on the private rented sector, where a share of the total housing stock has shrunk from more than 50 per cent 35 years ago to less than 9 per cent today, will be more perceptible.

Owner occupation has gained at the expense of other forms of housing tenure from the erosion and ultimate abolition in 1982 of income tax on imputed rental income from capital gains tax exemption and from the tax relief on mortgage interest. But the economic costs of owner-occupation, particularly through the reduction of inter-regional labour mobility, have recently become more apparent.

Rental yields

The extension of the BES to residential property and the associated disappearance of the Rent Acts to newly created tenancies have altered the balance of incentives. On average, the after-tax returns over five years from living in one's own house should be lower than those from selling and leasing back the house to a BES property company and investing the proceeds in another (well-run) BES property company.

The influx of new money into the rental sector should at least hold down these yields and could perhaps encourage the emergence of a wider range of private rented accommodation.

However, two questions must be raised about the Government's method of reviving

the private rental market by "levelling up" the tax benefits.

The question is whether extending a tax shelter like the BES, which will give excessive windfall returns to higher rate taxpayers at least over the first few years, is the most cost effective form of tax incentive. Allowing tenants to offset rental payments of up to a maximum of, say, £2,000 a year against their income tax might have been a more effective and fairer approach.

Tax benefits

The broader criticism is that for decades the fiscal bias in favour of all forms of housing has led to excessive price rises and over-investment. In that sector, the range of manufacturing and service industries, the bias is now being reinforced by the BES scheme, with the abolition of the domestic rates, which is the only surviving tax on owning residential property, and by the recent decision to extend Value Added Tax to the construction of commercial, not residential property.

Levelling down the tax benefits of owner-occupation would be more difficult politically than a general levelling up of the tax benefits for all other forms of savings and investments. But opposition to the reintroduction of tax on imputed rental income might be containable if it were phased in at about half the tax rate at the same time as domestic rates are phased out. Capital gains tax on owner-occupied property could also be phased in without causing excessive pain if sellers could "roll over" their gains when buying another, more expensive house so that the tax would have to be paid only when the home owner traded down or died.

Such reforms, when coupled with the relaxation of the Rent Acts, would amount to a much more coherent strategy for reviving the rental sector than reliance on the BES, which does, after all, run counter to the Chancellor's philosophy of eliminating special tax concessions.

Robin Pauley on the economic impact of the reshuffle in China's leadership

Burden on new shoulders

CHINA'S leaders, who rule a quarter of the world's population, do very odd things in the summer heat. Chairman Mao Zedong once floated in the Yangtze River to prove that all was well with him – although the impression was generally the opposite for anyone who knows what goes into that river. The present leaders all troop off on holiday together to the beach resort of Beidaihe and this year seem, sitting in the sun, to have lost their collective nerve and reversed policies carefully constructed in the more bureaucratic climate of Peking.

The leadership is alarmed – and confused – about the extent to which the Chinese economy is overheating and veering out of control. Its Beidaihe response is to clamp down on economic reforms, a decision which could, if prolonged, undo much which has been achieved during the last decade's painful attempts to drag the huge country into the modern world.

The reformers led by Mr Zhao Ziyang, Party General Secretary and protégé of Deng Xiaoping, have been defeated – at least temporarily. Mr Zhao has been forced to cede control of the economy to Mr Li Peng, the deeply conservative Premier who is technically second in the hierarchical pecking order. There is no indication yet that the policy changes have destabilised political power at the top; Mr Zhao retains all his political posts and, crucially, remains vice chairman of the key military commission which is chaired by Mr Deng, China's 84-year old paramount leader.

Under the careful patronage of Deng Xiaoping, the reformers have increasingly been given their head in recent years. But a strong counter-balance of conservatives, whose influence within the myriad party structures through the country seems to remain inherently stronger than that of the reformers, has always been in the wings waiting to strike: inflation and the dangers of overheating the economy are always the weapon.

In fact, the last overheating in 1984 and 1985 was in many ways much worse than the present difficulties. In those two years domestic demand grew in real terms by a third, exports increased by two thirds, imports by more than 130 per cent and the balance of payments on the current account slipped out of surplus to \$1.1bn deficit. In a disastrous year for the rural sector the value and volume of agricultural production fell in 1985.

These figures caused a good deal of anxiety and some tightening of economic policy. But

Zhao Ziyang has argued logically and persistently that some inflation is not only necessary but desirable

ries about this year's harvest. But money supply growth and price inflation have soared and policy response has been far too slow. Wages and bonuses have increased sharply in some sectors under the economic reform programme, often linked to productivity improvements. This is reflected in the rate of money supply growth now running persistently in excess of 30 per cent a year. Vast borrowing and spending by businesses on easy credit has increasingly been matched by individuals as low living standards and low interest rates for deposits have combined to push the Chinese, traditional savers, on an unprecedented spending spree which the country's inefficient factories have been unable to satisfy.

The picture is now reversed. Domestic consumption is growing at around 6 per cent a year and GDP by about 9 per cent. Exports are performing strongly, increasing by about 25 to 30 per cent a year; imports are shrinking by about 5 per cent a year in real terms, much of the cut-back being luxury goods but some being plant and equipment. The value of industrial production is rising (although not always the quality). Agricultural production has been rising although there are some wor-

ries about this year's harvest. But money supply growth and price inflation have soared and policy response has been far too slow. Wages and bonuses have increased sharply in some sectors under the economic reform programme, often linked to productivity improvements. This is reflected in the rate of money supply growth now running persistently in excess of 30 per cent a year. Vast borrowing and spending by businesses on easy credit has increasingly been matched by individuals as low living standards and low interest rates for deposits have combined to push the Chinese, traditional savers, on an unprecedented spending spree which the country's inefficient factories have been unable to satisfy.

Prices have soared. So too have some staple foodstuffs whose supply has fallen because the profit incentives on other farm products are higher. Earlier this year politically dangerous rationing of pork and sugar was introduced in some major towns including the capital.

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year rise of consumer prices in June was 19 per cent in June and 24 per cent in July.

The monetary authorities failed to act quickly enough. Only on August 16 did the central bank announce small rises in interest rates, which are still below 10 per cent, in a belated attempt at monetary tightening.

Too little too late, a characteristic which has typified plenty of other countries' economic management policies in years gone by. But it was a further indication in China's case that political rather than economic imperatives are dominant and there is little real structure of policy for using monetary controls as part of the array of economic levers.

By mid-August, there had been runs on many banks and the money had flown. Department stores were crammed with shoppers from morning till night; in one town every pair of shoes was sold in one week because of price rise rumours; one provincial department store reported a 50 per cent rise in sales of everything over the previous month while another reported sales of electrical goods 200 times higher than normal. At the end of July prices of brand-name cigarettes and liquor rose by as much as 250 per cent. Worst of all for the party leaders pack-

ing their bags for the summer break, panic buying of rice started in some areas, an event made more worrying by the fact that China has been suffering a widespread drought.

Zhao Ziyang went off to Beidaihe with his confidence already shaken. He has argued logically and persistently that some inflation is not only necessary but desirable in a third world economy which is trying to modernise, mechanise and replace inefficient and distorting subsidies with moves towards real pricing. But the economic background gave his arguments an increasingly hollow ring and the thought of an urban population of 200m possibly demonstrating against price rises and food shortages was too much for his colleagues. His announcement from Beidaihe last month that price and wage reforms would continue with further deregulation in a five year programme from 1989 to 1993 was unconvincing, undetailed and ultimately unsustainable.

The truth which emerged last week is that Li Peng and the even more conservative vice premier Yao Yilin are taking full control of the economy. There will be no radical steps on price reform and Mr Li, who abhors inflation and argues that political, civil and eco-

nomic stability are the overriding priorities, has obtained the agreement of the ruling State Council, on which Zhao does not sit, that the whole 1989-93 programme is only "tentative". This means it can and will be revised or ignored.

Already it is clear that there will be substantial wage rises in 1989 to please workers but no major price rises. Investment in fixed assets will be sharply cut back with major implications for joint ventures in the construction industry in sectors like hotels and tourism. Credit rules, which had been relaxed and partially decentralised, will return to stringent central control.

The question is whether genuine reform is going on hold for a year or two or whether fundamental change is now over. Only time will tell but time is not something China has to waste if it is ever to join the modernised world. Certainly, political reform would seem to be off the agenda for the foreseeable future.

Another key unanswered question is Deng's own position at Beidaihe. He is 84, reportedly suffering from prostate trouble and somewhat deaf – an important disability in China where a keen ear at meetings is crucial. On the other hand he pops up regularly in public, coherent, seemingly secure and beaming in the usual cloud of cigarette smoke.

Mr Deng has been a consistent supporter of the reformers. At last October's Party Congress he and they appeared to have scored an impressive victory with a great sweep of places on the new Politburo. But there was always a doubt about the balance of the key five-man Standing Committee, the power elite. Only Mr Zhao remained from the previous five, Mr Deng being among the retirees. The four new mem-

bers were Mr Li Peng, Mr Yao Yilin, Mr Qiao Shi, a mysterious character largely unknown in the west and Mr Hu Qili, a strong reformer and supporter of Mr Zhao. The Beidaihe upheavals suggest that Mr Qiao Shi, who had shown signs of supporting the reformers, may have turned to the side of Mr Li and Mr Yao, at least for now.

China is now at a critical point in its development. Either it pushes on with the extremely complex and painful adjustments, made more difficult by a population in excess of 1.2 billion and possibly double that number of illiterates, or it falls further and further behind into its own backwardness. It cannot stand still; much as the newly re-emergent conservatives would like it to.

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"THERE IS AN ALTERNATIVE"

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pilot with a liking for dominoes and inspecting military hardware.

Since Woerner left to become Secretary-General of NATO in July, Scholz has been in difficulties over the disaster at the US base of Ramstein which claimed over 60 lives in August, and will have to face a tough Bundestag inquiry. For the rest, however, he has been striking new ground.

He gave a lecture on Monday to the European Parliament in Strasbourg yesterday was expected to be marked by possibly violent demonstrations, and certainly the police were out in force. Yet in the event everything passed off peacefully: a protest march by about 1,000 members and friends of the European Jewish Congress around the city's winding streets. Our correspondent noted that the marchers were distinguished by their Gucci shoes rather than anything more militant. Still, John Marshall, the MP for the London constituency that includes Golders Green, was there to shout abuse when Aratoff arrived.

He also omitted to mention one of Woerner's favourite subjects: military cooperation with France. That went down rather well with the British diplomats present and will go down even better when reported to Margaret Thatcher.

Vox populi

■ The unsold late night Prom at Kensington Town Hall on Monday eventually achieved a decent-sized audience. That is good because there clearly is an untapped market for late night concerts in London and the Kensington venue is ideal. A note, however, on the programme: Vox I-VI by Trevor Wishart. Wishart proclaims himself to be vigorously left-wing. The Vox Cycle of electronic music was written between 1980 and 1983. The pieces become steadily happier as they go on. The Thatcher years perhaps?

Bonn's news

■ Rupert Scholz, the donnish new West German Defence Minister, is developing a notably different style from his predecessor, Manfred Woerner. Scholz, a bespectacled 50-year old Berliner, is a law professor who never served in the army. Woerner is a keen amateur

Gucci march

■ Perhaps Yasser Arafat, the chairman of the Palestine Liberation Organisation, is finally becoming respectable. His visit

Max Findlay reports on a shortage of young lawyers in Britain

Law of diminishing graduates

Solicitors firms have for some time now been seriously worried by an increasing shortage of good law graduates.

This is blamed on a number of factors: an enormous explosion in demand for lawyers in the wake of Big Bang and the increasingly international nature of legal practices; the cash crisis among lawfirms; the shortage of places at law schools; the financial difficulties of students over funding their way through their training (particularly acute for non-law students who have a two-year 'hurdle' to get through exams). A survey of law firms on the solicitors' finals course demonstrates that over 40 per cent of those with university degrees do not go on to become solicitors immediately.

In July this year, this recruitment crisis was officially recognised by the Law Society. A report by its training committee concluded that the Society should press for more places on more law degree courses at more law faculties. The profession is also being asked its views on "more radical measures" which include shortening the qualifying period for solicitors, tighter selection procedures for final examination course places and Government bursaries for final students.

Additionally, the committee "will have regard to" graduate starting salaries in other professions when setting articled clerks' minimum pay. (From August 1, this is £7,200 for Inner London, £5,900 for Outer London and £5,000 for the provinces.) Not that starting salaries in the capital are always that high: £12,000 is common and, as a lawyer put it, "that's not bad for knowing absolutely nothing".

The longer term rewards are not exactly depressing either. One legal recruitment consultant says a City solicitor just out of articles can earn £18,000, rising to £22,000 after 12 months. Within two years of qualifying, the same lawyer's salary can increase to £30,500. Three years after that, he or she can be earning as much as £50,000 with a major City firm, while in the longer term, £200,000 would not be an unlikely figure, according to the same source.

What else have law firms got to offer the discriminating graduate besides a lot of money? David Harris of Bird & Bird sums it up: "Students go into the law because it's

Law graduates

① Number of law graduates sitting the Solicitors Final Examination in the summer of each year

② % of the previous year's graduates this represents

Source: Law Society

	Universities	Polytechnics
1984	1833 58	680 66
1985	1781 58	783 67
1986	1780 57	885 69
1987	1735 57	849 67

perceived as a good, secure long term place to be as well as an interesting job". Given the wholesale redundancies in the City in the wake of the crash last October, this will now be an important consideration.

This is in contrast to the position shortly after Big Bang, when smart City firms undoubtedly lost bright people to the merchant banks.

Now, the boot is on the other, almost equally well shed foot. One eminent commercial lawyer spoke for many when he concluded: "A number of those who have gone into the banks have been hired to tears. A lot of the glamour has gone. The big salaries are going. A lot of people are delighted to move back into solicitors' practices."

The chance of a partnership is undoubtedly the biggest reason for solicitors to change firms. Cyril Batchelor of Room 12 concludes that "the most active point for change is between four and six years after qualifying."

Firms can vary widely in their choice of whom to appoint as partners. According to David Lloyd of Linklaters & Paines, it is normally about six years after qualifying. In a smaller London practice, however, according to an intellectual property lawyer: "We would very quickly identify potential partners and sometimes bring them in three years after qualifying."

Although London firms receive hundreds of applica-

tions for articles, most graduates apply to several firms at the same time and the partnerships complain that demand still outstrips supply. One leading corporate law practice had 700 applicants for articles in 1987, out of which they interviewed 200 and offered articles to 105. There were only 35 acceptances. But the battle starts much earlier. Herbert Smith (like many firms) runs a vacation scheme for second year law undergraduates. It lasts for three weeks with the students spending one week in each of the three main departments. Linklaters has similar four-week programmes attended by 70 students.

Because of the shortage of law graduates and the rapid expansion of new areas of practice (for example, in intellectual property, product liability, biotechnology, and environmental law) firms have turned their attention to students of other disciplines. Stephen Whyrow of McKenna's comments: "You're only a credible force if you've got the right people". So they want Japanese and Chinese linguists, chartered surveyors and chemists. David Hardie of Bird & Bird adds: "For our intellectual property side, universities

know the firm is very keen to recruit scientists." Linklaters "want every kind of non law graduates. And the same is true over here". Mr David Mander of Clifford Chance summarised a general attitude among recruiters towards students: "You want them to study what they really want to study rather than what they think will find favour."

The competition between solicitors for bright candidates has recently taken on a new dimension: university law faculties are turning to the big law firms for sponsorship to ease the current financial crisis in education. There is a clutch of well publicised figures. Cambridge University is reportedly seeking between £1m to £1.5m; King's College, London, will find £1m; New College, Oxford, need £200,000.

And that is just the beginning. Cambridge says that it will cost £1m to endow a professorship in perpetuity with proper back-up staff. Elsewhere £250,000 is needed for a professorial chair here, £10,000 for a provincial lectureship there. Herbert Smith has recently funded law chairs at Nottingham and Manchester. Other firms have (according to one practitioner) "distributed various bibles and bibles around the universities." The bibles and bibles can turn out to be as much as £500,000 to a single institution.

London law practices are so concerned about the scale of appeals that a number of them are currently engaged in establishing a City Solicitors Education Trust to help regulate admissions. But some solicitors wonder if it is right that any one firm can affect the choice of candidates by the depth of its pocket?

It is here that the real problem lies. The universities want the cash. The firms want to increase the number of good articled clerks. It is the student in the middle who is likely to be left in a quandary. As more courses are geared to the needs of practitioners and the law faculties are increasingly beholden to particular firms, it is going to be that much more difficult for undergraduates to obtain truly independent advice on where to apply. Perhaps they can take heart from one statistic arising out of McKenna's and Co's research. Of those who accepted places with the firm, a mere 8 per cent were influenced by their tutors as to where they should seek articles.

Tomorrow the Government will report another supposed drop in unemployment of some 50,000. But can its statistics be believed any more?

Last month alone three new "adjustments" were introduced. For the first time ever, all young people on Youth Training Schemes are suddenly being counted as "employed". Hitherto only the 25 per cent of YTS trainees with contracts of employment were registered as employed. Without creating a single extra job, the Government has bumped up the number of people classified as employed by 350,000 - and reduced the unemployment rate correspondingly.

In addition last month, the Government abruptly stopped counting the number of unemployed school leavers at all. Last year these youngsters totalled 100,000 to 130,000 over the three summer months. On top of that, a further 105,000 under-18 unemployed people will be unceremoniously offloaded from the jobless figures from October because they are no longer allowed to claim unemployment benefit.

These three changes alone alter how almost 1m people are categorised. But what is remarkable is that since 1979 there have been at least 16 other changes in the methods for counting the unemployed, all but one of which have had the effect of reducing the total, sometimes by large amounts.

The one change which increased the total was the first. From October 1978, fortnightly attendance at unemployment benefit offices replaced weekly attendance in the majority of cases. This added 20,000 to the total.

A year later, in November 1979, unemployed men aged 50 and over on supplementary benefit for over a year were given the option of the higher long-term rate of supplementary benefit and not registering for work. Over the next year this removed an estimated

UK unemployment

The fiddles behind the jobless totals

By Michael Meacher

37,000 men from the count.

A further change, making another supposed benefit taxable from July 1982, may have had the effect of persuading some potential unemployment benefit recipients, such as single parents, to opt instead for supplementary benefit, which is untaxed, and thereby disappear from the dole queues.

A very big change was made by Norman Tebbit in October 1982, which reduced the unemployment count by no less than 150,000, or 6.2 per cent of the total. It was made no longer compulsory for most of those getting state money to register at job centres. The basis of the unemployment count was thus changed from a clerical count of individual records of those registered at local offices, to one based on computer records of claimants at Unemployment Benefit Offices. Under the former system some 135,000 persons who were registered at job centres as unemployed did not, usually because of ineligibility, claim benefit. At a stroke, these genuinely unemployed people suddenly vanished.

This was followed by two other devices with almost as big an effect in cutting the figures. From April 1983 men aged 50 and over no longer entitled to unemployment benefit were not required to sign on at Unemployment Benefit Offices to obtain national insurance credits. The effect was to remove some 110,000 from the monthly count. Two months later, the right of men aged 50 and over to obtain the higher rate of supplementary benefit - effectively to retire - was extended to all those receiving this benefit. A further 60,000 were removed.

Then in July 1983 a reconciliation between the claimants records of the Department of Health and Social Security and the Department of Economic Development showed discrepancies in the figures for Northern Ireland. It was resolved by lowering the total by 5,000. Yet another change took effect last April. In order to obtain unemployment benefit, claimants were required to satisfy more stringent contribution conditions. This now removes about 3,000 per month on average from the total.

Tomorrow Norman Fowler will announce a new unemployment level of some 2,275,000. It is sobering but true that if all the Government's 19 statistical fiddles listed here were discounted, the real level of unemployment would be revealed to be still almost exactly 3m.

The author is Labour MP for Oldham (West) and shadow Employment Secretary

LETTERS

South African judicial interpretations

From Dr C.F. Forsyth.
Sir, Justinian's special pleading on behalf of the South African judiciary (September 12) misses the crucial point about the judicial role. No informed critic of the South African judges is unaware that the South African judges, like their English counterparts, are bound to apply the clear legislation enacted by the Parliament even when they consider that that legislation is unjust or morally abhorrent.

The debate over the judiciary concerns what the judges have done when the legislation in question is unclear or ambiguous, and the judges themselves choose the precise meaning to be given to the law. Have they chosen those meanings that advance the rights of the individual against the might of the executive? Or have they chosen those meanings that advance the executive at the expense of the individual?

Almost everyone who has read the relevant cases carefully has come to the conclusion that, since the late 1950s, the judges have frequently chosen to favour the executive at the expense of the individual; and often this has involved the judges in adopting artificial and formalistic interpretations of the law.

Protectionism does nothing for anyone in a free trading world

From Mr C.S. Um.
Sir, Protectionist measures have been shown to do nothing to increase the efficiency of the indigenous industry which they are supposed to "protect". That is a fact more important than the political whys and wherefores behind the European Community's (EC) latest decision to impose anti-dumping duties of up to 29.2 per cent on imports of video cassette recorders (VCRs) from Korea (William Dawkins's article, September 6).

A case in point is the US colour television industry. It remained uncompromising. Its own market against Korean imports even after the latter had had hefty anti-dumping margins levied on them. While the US consumer's freedom of purchase choice was conspicuously restricted by the regulation of the value-for-money factor, the quality fac-

When national frontiers are removed . . .

From Mr Stanley Crossick.
Sir, Your leader (September 9) and substantive reports on the Treasury's paper suggest that there is a clash between Brussels and London on VAT and excise harmonisation. I

suggest that there is not.

Both the UK Government and the European Commission agree that trade distortions resulting from indirect tax differences will be minimised by market forces once national frontiers are removed.

The Commission maintains that most member states insist on harmonisation as a precondition for the abolition of frontier controls.

The UK must determine whether, contrary to the Commission's understanding, 12 member states will agree to the removal of frontier controls without harmonisation.

If not, the UK Government must decide whether its opposition to indirect tax harmonisation is so deep that it would prefer national frontiers to remain forever.

Stanley Crossick
CBI Belmont,
European Community Office,
Avenue de Cortenbergh 118-128,
B-1040 Brussels,
Belgium

market. Korea has been progressively dismantling her import barriers since the beginning of the 1980s.

An EC trend in the opposite direction at this time is disappointing. The timing of the EC's latest decision is especially hard to understand: it comes just after Korea has voluntarily cut back her exports of VCRs to EC countries (from July 1) as a response to concerns that exports were rising too quickly.

Protectionism is used as a veil to hide a country's (or region's) weakness in a certain industrial sector (as seems increasingly to be the case), then the ultimate loser must be the consumer. European consumers choose to buy Korean VCRs because these offer good quality at a reasonable price. Now they are faced with a choice between an extra 30 per cent on the price of a VCR,

Korea Trade Centre,
Vincent House,
Vincent Square, SW1



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Cuba accuses UK over envoy's expulsion

By Robert Mauthner, Diplomatic Correspondent, in London

CUBA YESTERDAY accused the British and US intelligence services of being indirectly responsible for the shooting incident involving a Cuban diplomat that has led Britain to expel Dr Oscar Fernandez Mell, the Cuban Ambassador, as well as the diplomat concerned.

While the British Foreign Office maintained its habitual silence on "security matters," an unnamed police spokesman appeared at least partially to confirm the involvement of British security agents, when he admitted that a man wounded in the West London incident on Monday night was a security officer keeping watch on the envoy.

The expulsion within 24 hours of the Ambassador and Mr Carlos Medina Perez, a Third Secretary at the Embassy, was ordered by Mr

Police said the slightly injured man, who was questioned by the Anti-Terrorist Squad, was one of a four-strong security squad reported to consist of three men and a woman who followed the diplomat to his home in Sussex Gardens, Paddington, London.

Mr Perez drew his gun as he stepped from his own car outside his flat and fired five shots, grazing the hand of one of those following him. Mr Perez, who was arrested but later released when he claimed diplomatic immunity, told police he thought he was being

followed by an assassination squad.

Before boarding his flight at Heathrow airport yesterday for Czechoslovakia, on his way home to Havana, Dr Fernandez-Mell said he believed that there had been "disgraceful complicity" between the US Central Intelligence Agency (CIA) and the British counter-intelligence organisation MI5.

The Cuban Foreign Ministry, which described the British expulsion order against the Ambassador as "arbitrary and unfair," later issued its version of events.

Mr Carlos Medina Perez was leaving the building where he was based. He was approached by Mr Florentino Azpilaga Lombard, who, the statement alleged, was "the deserter and traitor" who on June 6 1987 abandoned his duties at the Cuban Embassy in Prague and

went to work for the CIA.

"Azpilaga was accompanied by three men and a woman. The traitor, in a menacing way, instructed Senior Medina Perez to defect. In reply to this, the envoy took out the gun he was carrying, fired it, and the group ran away."

The Ministry said it was absolutely impossible for an individual "who is totally in the hands of the CIA and under strict security measures" to travel to Britain and carry out such an act against a Cuban diplomat in London without the close co-operation of the British intelligence services and authorities.

The "extremely irregular and unjust" expulsion of the Cuban Ambassador was no more than a smokescreen to cover the co-operation between the CIA and British Intelligence.

Paribas sells UK broker to Commercial Union

By Clive Wolman
in London

QUILTER GOODISON, the British stockbroking firm headed by Sir Nicholas Goodison, the London stock exchange chairman, which used to be one of the largest private investor firms, is being sold to Commercial Union, the UK composite insurance company.

The move represents the largest yet made by a British insurance company into stockbroking after the industry remained on the sidelines during the spate of acquisitions in the run-up to the 1986 Big Bang reforms.

Paribas Group, the French bank which bought Quilter Goodison 2½ years ago, is to sell what represents a substantial loss of its private client advisory and portfolio management arm, Mr Clive Honeybourne, Quilter's managing director and a Paribas director, said that the sale price "reflected" the net tangible asset value of the company which appears in the accounts at about £15.2m. But Paribas will keep the insurance broking, institutional and passive fund management businesses which have all been integrated into the capital markets or other divisions of the bank.

Unwilling to advocate the amendment of the immunity provisions of the Vienna Convention which, after all, benefit British diplomats as much as they do foreign diplomats in Britain, the Government is at least determined to make clear that it will not tolerate the flouting of British law by foreign envoys. That law specifically lays down that licences to have guns will not be granted to foreign diplomats except in very special cases.

If the Government has not yet had much success in curbing diplomatic guns, judging by the events of the last few days, its tougher stance on immunity has led to a dramatic reduction of the number of unpaid parking tickets by diplomats. Only a few years ago, the number of fixed penalties for parking offences waived diplomatically reached the astonishing total of 70,000.

Diplomatic immunity is based on the ancient principle that the bearer of bad news should not be punished for his pains and that civilised relations between states are possible only if their official representatives can move about without any interference. That principle may be pushed to unacceptable limits by a very small number of envoys, but the fact remains that it allows diplomats to pack their bags and go home even in the worst of cases, such as the outbreak of war between two countries.



Diplomat Khang Than Nhan brandishes a pistol outside the Vietnamese embassy in London last week in an incident which led to his expulsion.

Thus, neither the junior Vietnamese diplomat who threatened demonstrators outside his Embassy with a pistol nor the Cuban Third Secretary who, last Monday, fired his revolver at a number of alleged attackers, will be prosecuted under British law, as they would have been if they had been ordinary British citizens.

Instead, the Government has taken the only course of action possible under the Vienna Convention, which clearly provides for the immunity of diplomats from the jurisdiction of the country to which they have been assigned, unless their own government expressly agrees to a waiver of such immunity. The two diplomats in question, and in the Cuban case the Ambassador as well, have been declared persona non grata and expelled from Britain.

Some people will doubtless feel inclined to agree with Mr George Foulkes, Labour foreign affairs spokesman, that

"In the case of a policeman

it would be different."

Fletcher, who was considered to have been killed by a shot from the building in St James's Square housing the Libyan People's Bureau, not only were all members of the mission expelled, but diplomatic relations with Libya were broken off. In the Vietnamese case, no shots were fired, so only the diplomat brandishing the weapon was expelled and the Ambassador was allowed to remain in Britain.

On Monday, however, shots endangering the lives of innocent bystanders were fired by the Cuban Third Secretary and it was therefore deemed that stiffer measures, involving the Ambassador's expulsion, were in order.

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Instead, the Government has taken the only course of action possible under the Vienna Convention, which clearly provides for the immunity of diplomats from the jurisdiction of the country to which they have been assigned, unless their own government expressly agrees to a waiver of such immunity. The two diplomats in question, and in the Cuban case the Ambassador as well, have been declared persona non grata and expelled from Britain.

Some people will doubtless feel inclined to agree with Mr George Foulkes, Labour foreign affairs spokesman, that

"In the case of a policeman

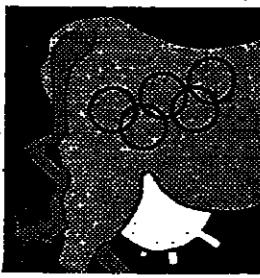
it would be different."

Fletcher, who was considered to have been killed by a shot from the building in St James's Square housing the Libyan People's Bureau, not only were all members of the mission expelled, but diplomatic



INSIDE

Beefing up US cattle prices



Faced with a devastating drought, US cattle ranchers are trying everything to keep their herds together, even "trucking cattle to greener pastures. But the US national herd has reached its lowest level since the 1960s. Now the cattle business is seeing

prices rebound from their depressed levels at the beginning of the summer as South Korea buys US beef to feed the crowds at the Olympics and high poultry and pork prices have made beef very competitive on the supermarket shelves. Page 42

South African oil stocks 'run down to meet debt'

South Africa has run down its strategic stockpile of oil to only six to seven months' consumption in order to release foreign exchange to meet debt service and other balance of payments requirements, according to a report by the Dutch-based Shipping Research Bureau. The 7 to 8m tonnes figure is less than half earlier estimates. Page 42

Ford and Nissan show flexibility



Shifting alliances in the global motor industry continue to produce new ventures between former rivals. This week's agreement between Ford and Nissan, to build a new multi-purpose passenger vehicle in the US, illustrates the growing flexibility and the ad hoc basis of many collaborative projects. Page 24

ST sprints in chip race

In its first year of existence, the French semiconductor company SGS-Thomson has had to run at a sprint just to stay in an international chip race characterised by ceaseless new product development and ruthless pricing. An imminent industry shake-up is expected to annihilate medium-sized companies, leaving only a few large, broadly-based groups, of which ST intends to be one. Page 25

Fine print appeal for Briarley

A man obsessed with fine print, Sir Ron Briarley left by handing over the day-to-day running of his business empire and concentrating on his favourite pastime of analysing annual reports. This coincides with the possible merger of the Briarley group's three separately quoted constituents into a single Wellington-based entity.

Problems abound, but Sir Ron continues to burrow away looking for assets ripe for acquisition. Page 25

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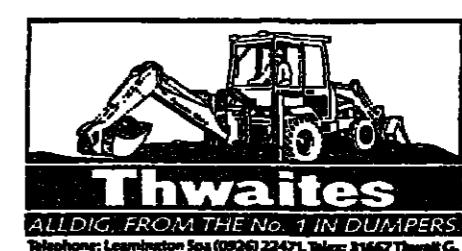
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Chief price changes yesterday

	FRANKFURT (cont)	Paris	100	+	25
Fluor	2012 +	27	EDF	405. +	25
MAN	423 +	105	Siemens	574.5 +	25
Merck	1564.5 +	125	Opel	2200. +	25
Deutsche B.	175 -	35	Perstorp	515 -	25
Heckert	505 -	25	TOYOTA (cont)	505 -	25
BMW	25	25	Yamaha	515 -	25
Merck	90 +	102	Yamaha Ind	1670 +	25
Kroger	205.5 +	12	Yamaha Ind	1610. +	25
TW Services	210.5 +	2	Yamaha Ind	1610. +	25
Worley	210.5 +	2	Yamaha Ind	1610. +	25
Montrose	74.5 -	13	Yamaha Ind	1610. +	25
Met-Sorenson	9.5 -	4	Yamaha Ind	1610. +	25
PARKER (PPV)	207 +	15	Yamaha Ind	1610. +	25
Fluor	210.5 +	10	Yamaha Ind	1610. +	25
Yamaha	3170 +	240	Yamaha Ind	1610. +	25

FINANCIAL TIMES
COMPANIES & MARKETS

Wednesday September 14 1988



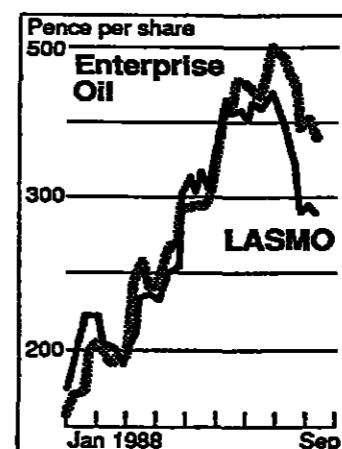
Sir Denis Roeke, British Gas chairman: lamentations at being forced to part with Enterprise Oil

Four years of pass-the-parcel

June 1984: North Sea oil interests of British Gas are privatised as Enterprise Oil.
28 June 84: Issue flops and RTZ applies for 49% of Enterprise's equity.
29 June 84: Government limits RTZ to 10%.
July 1984: RTZ launches tender offer and takes stake to 29.5%.
Dec 1985: RTZ swaps 29.5% stake for 25% holding in LASMO.
Feb 1987: RTZ lifts stake in LASMO to 25%.
Apr 1988: RTZ quits oil sector, selling oil and gas interests to EAI and to Cossor, prompting speculation that it might sell stake in LASMO.



Christopher Greenstreet, chief executive of Lasmo



Graham Hearne, chief executive of Enterprise Oil

Rooke's move begins North Sea chess game

Max Wilkinson, Resources Editor, examines the motives behind British Gas's dawn raid for Lasmo

BRITISH Gas's long history as a starchy state monopoly hardly prepared the City of London yesterday for its role as a dawn raider pointing its carbine at the UK's two largest independent oil companies.

For this reason the brokers and bankers were aghast as to what British Gas could be up to in buying London & Scottish Marine Oil (Lasmo) shares at a premium to Monday's price in one of its most hostile moves since the corporation was privatised a year-and-a-half ago.

Uncertainty changed to mild derision, in some quarters at least, when it appeared by the early afternoon that British Gas had been toying a pogrom rather than a rifle.

The flurry of market activity left Lasmo's share price 28 per cent higher than on the previous day, at 25.44, and pushed the index of Enterprise Oil, in which Lasmo holds a 25 per cent stake, up by 25.63.

However, at the end of it all, British Gas had collected a mere 11.4 per cent of Lasmo's shares

instead of the 14.7 per cent which it was generally assumed to be trying for, as a prelude to a full bid.

The question is what the corporation will do next, which depends, of course, on what it was trying to do yesterday.

The most plausible assumption must be that after two less than happy forays abroad, with attempts to buy energy companies in New Zealand and Canada, British Gas is determined to show without delay that it can be agile in buying oil assets and is turning its attention to the meagre remains of the independent sector in the North Sea.

During the publicity build-up to its privatisation in 1986, much was made of British Gas's potential to use its secure cash flow from the monopoly gas business for exciting new ventures. These, it was said, would continue to secure its corporate growth as demand for UK gas flattened out in the next decade or so.

Shortly after privatisation, Mr Chris Briarley, one of the man-

aging directors, was put in charge of acquisition strategy, although Sir Denis Roeke, the chairman, and Mr Bob Evans, the chief executive, seemed to stand curiously aloof from this new high-profile strategy.

The first attempt was to buy Valley Industries of Canada. This ran into political crossfire, which forced British Gas to conclude a messy deal, for £300m, giving it 51 per cent through a rather unusual mixture of shares. Since then Bow Valley's performance has deteriorated, making the price paid appear more expensive than at the time of purchase.

The second effort was to buy the state-owned Petroleum Corp. of New Zealand, which seemed to offer British Gas the chance to marry its strong cash flow with the political expertise built up in its long wars with the British Government.

However, on the brink of success, in March this year, a political landmine blew up in its face

when the New Zealand authorities suddenly withdrew, leaving British Gas looking flushed and flushed.

It is hardly surprising, then, that British Gas should turn back to the North Sea oilfields from which it was banished five years ago when the Thatcher Government forced it to divest its oil assets into one of the earlier privatised ventures, Enterprise Oil.

Sir Denis Roeke's lamentations about being forced to part with oil that he thought were rightly the corporation's property have echoed down the years. However, in June he got his chance to repair some of the damage with the purchase of Acre Oil for £37m.

A bid for Lasmo, with oil assets in the North Sea and Indonesia, would solve the old wound more completely, particularly in view of Lasmo's 25 per cent stake in Enterprise.

Yesterday's less than glorious entry into the market can be only the first move in a complicated chess game involving four inter-

a price which justified such an assumption.

RTZ holds 29.9 per cent of

Lasmo and has been talking to several prospective purchasers, including British Gas. However, it has agreed not to sell a large stake to a single purchaser with not so far been given.

Lasmo, in turn holds 25 per cent of Enterprise, matching ICI's holding of the same size in that company.

Enterprise, meanwhile,

remains under the fragile protection

of a government "golden share," which could block a take-over, but this expires at the end of the year.

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of a government "golden share," which could block a take-over, but this expires at the end of the year.

The general view, therefore, is that Lasmo is the chosen victim and that British Gas will not want to look foolishly half-hearted.

On the other hand, it may not want to pay too foolish a price – even with the tempting possibility of setting the clock back five years and making the Government look silly.

Lex, Page 22

IBM rivals opt for own standard

By Louise Kehoe in San Francisco

DOZENS of personal computer manufacturers, software makers and makers of computer peripherals yesterday supported their support for a new industry standard internal "bus" structure for high-performance personal computers.

Their announcement marks a split with IBM, which 17 months ago announced its own high-speed personal computer bus called the Microchannel.

Intel, the leading microprocessor supplier to the personal computer industry, said yesterday it would make EISA chips available in the second quarter of next year. Personal computers incorporating EISA are expected to become available by late next year.

Mr Canion said: "When it became evident that Microchannel was not going to take over the market, we like others came to the conclusion that what was needed was a higher performance bus standard compatible with the existing standard." He added that, over the last two months, dozens of companies had been involved in setting the specifications for EISA.

Unlike IBM's Microchannel system, personal computers incorporating the EISA bus will be capable of running existing standard software and using peripherals designed to work with today's PCs.

In a related move yesterday, IBM added a new model to its Personal System/2 product line that does not incorporate the Microchannel. The new Model 30-206 is based on the existing industry standard bus. IBM is, however, expected to continue to support and expand its use of the Microchannel in high-performance personal computers.

Mr Rod Canion, president of Computer Systems, predicted: "The Microchannel will become an IBM standard while the rest of

Disposals push Gold Fields profits to £302m

By Clive Harris in London

DISPOSALS of interests in South Africa and Chile enabled Gold Fields, the London-based mining finance holding company, to increase pre-tax profits by 24 per cent to £302.4m (£161m) in the year to June 30.

INTERNATIONAL COMPANY NEWS

Kroger considers \$3.8bn defence against takeover

By Roderick Oram in New York

KROGER, the second largest US supermarket chain, is exploring a plan to borrow heavily so it could pay out to shareholders some \$3.8bn in cash dividends and junk bonds.

The Cincinnati-based company has long been considered a candidate for recapitalisation or takeover because its performance has continued to lag, in spite of a restructuring two years ago.

Mr Lyle Everingham, chairman, said yesterday the recapitalisation plan had been prompted by a rash of takeovers in the industry. Most notably, American Stores became the largest supermarket chain with its \$2.5bn purchase of Lucky Stores earlier this year.

In addition, Kroger faces the prospects of a raid by an investment partnership led by the Haffs family of Maryland. The Haffs have prospered handsomely from a series of stock market assaults on about nine leading retailers over the past four years.

The Haffs face a huge credibility problem on Wall Street, though, because so far they have always cashed in their stakes rather than consummate a takeover.

None the less, news that

they had received regulatory approval to buy Kroger stock helped drive up the price yesterday.

It jumped 99¢ to \$49¢ shortly after Kroger announced its plans.

The supermarket chain is considering paying for each of its 78.6m common shares a special cash dividend of about \$40 and a junior 20-year junk bond with an estimated trading price of about \$8. The package would be worth about \$3.8bn in total.

In addition, Kroger's shares would continue to trade so shareholders could benefit from any further improvement in the company's performance.

Wall Street arbitrageurs estimated yesterday that post-recapitalisation the "stub" common stock would be worth about \$7, valuing the total package at about \$35 a share of \$4.25m.

Kroger said Goldman, Sachs, its investment banker, was confident it could raise funds for the plan by borrowing from commercial banks and by private placement of subordinated debt.

Analysts expect Kroger will have to borrow virtually all \$3.8bn, which would close to

quadruple its existing long-term debt of close to \$1bn. The present debt load represents about 42 per cent of its capital.

Mr Everingham said: "The substantial debt would be repaid from cash flow from operations, disposition of non-core and unproductive assets, significant reduction in capital expenditures and reduced expenditures."

Ms Susan Steinberg, an analyst with Shearson Lehman Hutton, said the additional borrowings would "seriously hamper their competitive flexibility".

She had long anticipated a restructuring because "the company has so much potential" which it was failing to maximise.

Based on its strong cash flow, she estimated the group could sell a warrant price of about \$55 a share. Despite proposing a recapitalisation, the company could still attract other bidders, she added.

Kroger said it was too early to identify which assets it would classify non-core. It has 1,300 supermarkets, 900 convenience stores, 15 membership warehouses and 41 food processing plants around the country.

Customer deposits were up 8.9 per cent to \$5.94bn, while the assets managed for customer accounts rose 18 per cent to \$1.787bn.

NRA said the board, which approved the first-half results, did not discuss the possibility of a merger with its 50.4 per cent owned Banca Cattolica del Veneto subsidiary.

Last month, NRA and Banca Cattolica rallied strongly on the Milan bourse on rumours that a merger between the two banks was imminent. A merger would probably require a public tender offer by NRA for the shares of Banca Cattolica it does not already own.

NRA said the plan to merge the two banks was still under study. An alternative to the proposed merger would be to integrate several support services of the two banks in an effort to reduce operating costs. The banks have already set up an integrated information system and a unified personnel training division.

Interest gain lifts Banco Ambrosiano

NUOVO BANCO Ambrosiano (NBA), Italy's second largest private-sector bank, yesterday reported gross operating income of L138.1m (\$88m) in the first half of the year, down from L136.4m a year earlier.

As part of its new strategy, NBA has shifted again with this week's agreement by Ford, the second largest US automotive concern, and Nissan, ranked second among Japanese vehicle makers, to join forces to produce a new multi-purpose passenger vehicle in the US.

The bank noted, however, that without extraordinary gains recorded in the first half of 1987, gross operating income was up 7 per cent in the opening half of 1988.

The increase was attributed primarily to a rise in interest income to L211.8m in the first six months, from L196.6m a year earlier. Results were also helped by an increase in profits from foreign exchange operations, to L5.6m from L3.5m, and a rise in fee income from banking services, to L31.1m from L28.1m.

In line with stock exchange regulations, NBA did not report net results for the first half in 1987, it reported net income of L43.1m.

NRA disclosed, however, that loans outstanding to customers rose 11 per cent to L4.661m as of June 30, while loans to other banks were up 31 per cent to L1.710m. The increase in loans was well above the Bank of Italy's target ceiling of 10 per cent.

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Motor groups steer flexible route

Kevin Done on Ford and Nissan's approach to a joint venture

The kaleidoscope of global alliances between the main players in the motor industry has shifted again with this week's agreement by Ford, the second largest US automotive concern, and Nissan, ranked second among Japanese vehicle makers, to join forces to produce a new multi-purpose passenger vehicle in the US.

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Mr Harold Poling, Ford vice-chairman and chief operating officer, said the association with Nissan supported "our strategy of supplementing our internal resources without compromising our in-house proprietary capabilities in the essential core elements of our business."

Ford said that to remain competitive in today's markets it was impossible to do everything alone. Co-operative programmes were necessary to provide a full spectrum of product offerings.

While seeking such a pact, the Japanese vehicle makers are also pressing ahead at full speed with establishing their own wholly-owned assembly operations abroad, particularly in the US and, in future, in West Europe.

Nissan is aiming for 25 per cent overseas production by the early 1990s, while Toyota has set an overseas production goal of 500,000 vehicles by 1990, having expanded its foreign production bases rapidly over the last three years.

Honda, which is expanding massively in the US, is set to increase output at its Ohio plant to more than 500,000 vehicles by 1990.

The move towards global sourcing not only of components but increasingly of built-up products is breaking down previously accepted geographic frontiers. Honda is exporting cars from Japan to the US, while Toyota has begun to ship cars from the US to Taiwan.

The Japanese manufacturers are gradually replicating their domestic industry in the US with an increasing complexity of local components production.

New legal setback for Monsanto

By Our New York Staff

MONSANTO, the US chemicals and pharmaceuticals group, has suffered its second court setback in a matter of days over a contraceptive device made by its G.D. Searle unit.

In a Minneapolis court on Friday, Searle was ordered to pay \$8.75m damages to a woman who suffered pelvic infections and sterility after using its Copper-7 intrauterine contraceptive device.

In the latest ruling, a court in St Paul, Minnesota, ruled that Monsanto could be sued by Ms Julie Daher, who alleges she was harmed by the device.

A federal judge overruled Monsanto's objection that it was not liable because it only acquired Searle in 1985.

First-quarter loss for National Semi

By Louise Kehoe in San Francisco

STOCK prices of most US semiconductor manufacturers fell yesterday on news of disappointing results from National Semiconductor, a leading semiconductor and computer maker.

The group reported first-quarter losses of \$30.5m, including a charge of \$16.8m associated with the restructuring of its computer business.

Earnings for the same period last year were \$12.5m or 10 cents per share. Sales for the fiscal 1988 first quarter were \$649.4m, compared with \$517.6m last year.

During the quarter, National Semi consolidated the operations of its Datachecker unit, which makes computerised supermarket check-out systems.

The year-ago first-quarter results have been restated to reflect accounting changes.

Mr Charles Spork, president and chief executive, said:

Provigo boosts earnings

By Robert Gibbons in Montreal

PROVIGO, Canada's second largest food distributor, looks to have achieved a turnaround in its controversial catalogue merchandising chain.

The group bought Consumers national catalogue retail operation more than three years ago and immediately ran into trouble.

Provigo lifted second-quarter profits to C\$16.4m (US\$13.8m) or 19 cents a share on sales of C\$2.2bn, up from C\$1.3m or 16 cents on sales of C\$1.5bn a year

earlier. Consumers provided C\$17m in sales and about half Provigo's profit increase.

In the first half, Provigo earned C\$24.5m or 29 cents a share on sales of C\$3.7m, compared with C\$23.3m or 28 cents on sales of C\$3.1m.

Canadian Pacific, buoyed by a resurgence in profits in the first half this year, has increased its quarterly dividend from 15 cents a share to 19 cents.

Tractebel bonds sold

By Our Financial Staff

PETROFINA, Belgium's largest oil refiner and processor, confirmed yesterday that it has fully subscribed an issue of bonds with warrants for purchase of stock in Tractebel, a holding company active in telecommunications and energy.

The announcement confirmed speculation that Petrofin has acquired the bonds. It did not comment, however, on other market rumors which have claimed that Petrofin and its allies may exercise the

warrants soon as a gesture of support to Tractebel.

Tractebel has seen its stock rise 15 per cent since the beginning of last month amid growing suspicions that a predator may be at large.

The bond issue of BEF2bn incorporates warrants for 635,000 Tractebel shares, equal to about 5 per cent of its capital. Petrofin is particularly willing to act as a friend because Tractebel is the largest single stockholder in Petrofin.

NOVA

Cdn \$1,750,000,000
Limited Recourse Term Credit Facility
for the Acquisition and Refinancing of
Polysar Energy & Chemical Corporation

by a wholly owned subsidiary of
NOVA Corporation of Alberta

Funding provided by

The Bank of Nova Scotia
The Toronto-Dominion Bank
The Royal Bank of Canada
Canadian Imperial Bank of Commerce
Bank of Montreal
National Bank of Canada
Credit Suisse Canada

Agent
Scotiabank, Corporate Banking



Scotiabank

ML-GT New Pacific Equities Growth Fund, N.V.

(Incorporated in the Netherlands Antilles)

Placing by

Merrill Lynch Capital Markets
of up to 100,000 shares of Common Stock,
par value U.S. \$1.00 per share

The principal business of ML-GT New Pacific Equities Growth Fund, N.V. is to invest in a portfolio of equity securities issued in or traded on the securities exchanges of newly industrialized or emerging countries of Asia and Oceania.

Application has been made to the Council of The International Stock Exchange for admission of the Shares of the Fund to The Official List.

Listing Particulars relating to the Fund are available in the Extel Statistical Service and may be obtained during usual business hours (Saturdays and public holidays excepted) until September 16 from The Company Announcements Office, The Stock Exchange, London EC2N 1HP and until October 3 from:

Merrill Lynch Limited
Ropemaker Place,
25 Ropemaker Street,
London EC2Y 5LY.

Dated: September 14, 1988
The Shares have not been registered under the United States Securities Act of 1933, as amended, and may not be offered or sold directly or indirectly in the United States of America or to or for the benefit of United States Persons.

NOTICE

THE SUMITOMO BANK, LIMITED

U.S. \$120,000,000

2 1/4 per cent. Convertible Bonds 2000

Notice is hereby given that with respect to the issuance of 50,000 new shares for public offering resolved at the meeting of the Board of Directors held on 28th July, 1988, the issue price of new shares resolved at the meeting of the Board of Directors held on 22nd August, 1988 was Yen 3,262, and as a result of such resolution of the issuance of new shares for public offering the following adjustment of the conversion price shall be made pursuant to 7(H) of the Trust Deed constituting the captioned Bonds dated 29th July, 1988:

- 1) Current conversion price before adjustment: Yen 1,930.2
- 2) Conversion price after adjustment: Yen 1,978.6
- 3) Effective date of the adjustment (Japan time): 10th September, 1988

By: The Sumitomo Bank, Limited
14th September, 1988. Principal Paying & Conversion Agent.

KETSON p.l.c.

Notice to the members of Ketson p.l.c.
The company has today issued supplementary listing particulars relating to Ketson p.l.c.'s issue of new ordinary shares of 5p each in connection with a recommended offer to acquire the whole of the issued and to be issued ordinary share capital of The Moorgate Group Plc.

Copies of these supplementary listing particulars can be obtained or inspected at the registered office of Ketson p.l.c. and at the offices of Macfarlanes, 10 Norwich Street, London EC4A 1BD.

To the Holders of WARRANTS

To subscribe for shares of common stock of

WAKO SECURITIES CO., LTD.
(Issued in conjunction with an issue by

Wako Securities Co., Ltd.

(the "Company")

of U

This announcement appears as a matter of record only.

**U.S. \$100,000,000
Euro-Commercial Paper Programme****Dealers:**Bank of America International Limited
Chase Investment Bank
SBCI Swiss Bank Corporation Investment banking**Issuing and Paying Agent:**

The Chase Manhattan Bank, N.A.

Arranged by:

Chase Investment Bank

September, 1988



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INTERNATIONAL COMPANY NEWS

Banque Indosuez up 46% to FF514m

BANQUE Indosuez, the French banking group, boosted net income for the first half of 1988 by 46 per cent on a combination of one-time gains and improved profit from 'market-related operations', AFP-DJ reports from Paris.

The wholly owned bank unit of Cie Financiere de Suez also said it made a big increase in provisions for loan risks that brought its coverage to 'about 40 per cent of its loans outstanding' to countries in the debt rescheduling process.

Axel Jeancourt-Germann, Indosuez president, said the rise in first-half profits to FF514.8m (US\$1.7m) - up from FF512.2m a year earlier - was based on 'improved operating profits as well as non-recurring gains that added FF152.1m to earnings, up from only FF52.6m in the first half of 1987.'

Raine plays for referral of Tarmac bid

By Andrew Hill in London

RAINE INDUSTRIES, the UK housebuilder, yesterday unveiled its strategy for the final stages of its hostile bid for Ruberoid, the British roofing materials group, gambling on the possibility that a recommended counter-bid from Tarmac would stumble over monopolies problems.

Raine's bid was due to close today, but the group said yesterday it would extend its main cash-and-shares offer at least until October 11, or until a decision was taken on whether to refer the 21.4m (US\$24m) cash counter-bid from Tarmac, the UK building materials and construction group, to the Monopolies and Mergers Commission.

Raine, which is not going to increase its bid, also invited Ruberoid shareholders to accept the cash alternative.

Colgate-Palmolive to sell health division for \$960m

By Our Financial Staff

COLGATE-PALMOLIVE, the second largest US detergent and toiletries producer, is to sell its Kendall Company health care unit and related businesses for \$960m to privately-held Clayton and Dubilier, a leveraged buyout (LBO) specialist.

New York-based Clayton and Dubilier said the company is forming to make the leveraged buyout has the equity participation of Kendall management members. It added that the transaction is the largest buyout the firm has yet undertaken but the size was a reflection of new trends in the market.

Kendall, based in Boston, has been a wholly owned subsidiary of Colgate-Palmolive since 1979 and is among the top five US health care product companies. The businesses being acquired had sales of about \$350m in 1987.

Kendall manufactures and supplies disposables, medical products to hospital alternate care facilities and the rapidly growing home healthcare market in 61 countries. It has more than 10,000 employees worldwide.

Colgate-Palmolive had announced in April that it planned to sell its health care units.

Airlines of Britain profits soar

Michael Donne, Aerospace Correspondent, in London

THE AIRLINES of Britain Holdings group, which includes British Midland Airways, earned pre-tax profits of nearly £1.7m (US\$2.5m) in the first half of this year, compared with £762,000 in the first half of 1987, on turnover up from £82.3m to £82.5m.

The profit from airline operations was up from £105,000 to more than £1.2m but the bulk of the improvement came from profits on the sale and subsequent lease-back of six McDonnell Douglas DC-8

services. Mr Michael Bishop, the chairman, said that the continuing strength of the UK economy had been fundamental to the improvement in airline profits. Passengers carried had risen from 1.16m to nearly 1.65m.

British Midland had expanded vigorously, with Heathrow to Amsterdam service achieving profitability. Seven more jet aircraft were being introduced by the airline in the second half-year to meet rising demand on scheduled

UK lift truck maker jumps to £4m

By Nick Garnett in London

LANCER BOSS, the UK's second-largest lift truck maker, has continued its sharp recovery after poor results in the last two years.

The family-owned company yesterday reported pre-tax profits on ordinary activities of £4.07m (US\$5.5m) in the year to March, up from £1.06m last year.

With a profit of £2.66m in 1987 and a £2.4m loss in 1986.

Retained profit for the year at £8.1m compares with £3.6m for the previous year and a £900,000 loss in 1986.

Mr Neville, chairman and majority shareholder in Lancer, said prospects for the present year were very good. The company

makes lift trucks, sideloader vehicles and narrow-aisle warehousing equipment.

Mr Neville said a sales rise of 20 per cent to 25 per cent had been forecast, but that the estimate might prove conservative. Profits would probably rise at a steeper rate.

However, he said he expected a downturn in the market towards the end of next year.

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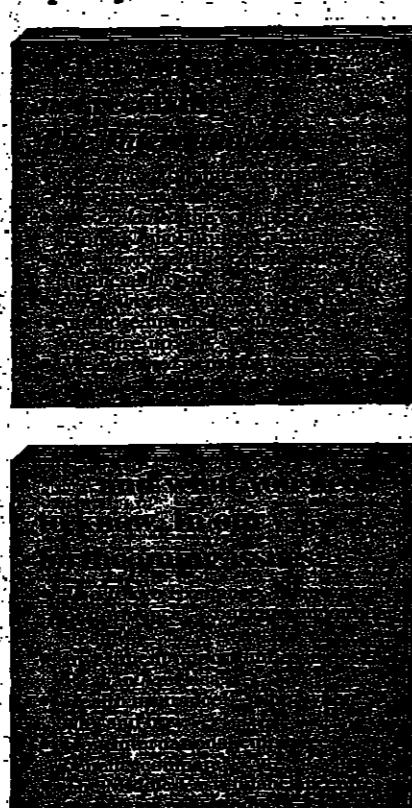
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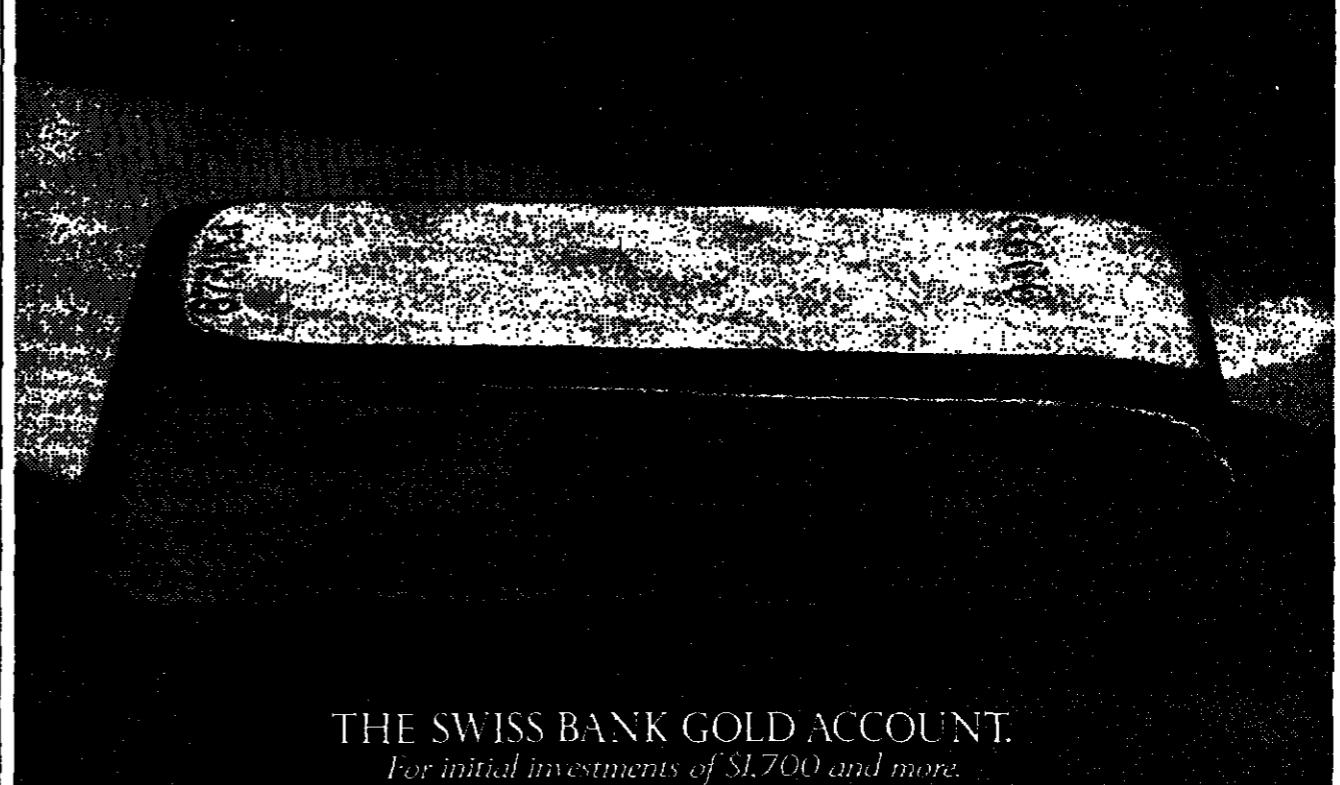
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UK COMPANY NEWS

Harland Simon shares gain 30p as Mountain Dew increases its stake

Mr Ehsil Nadir, 24, eldest son of Mr Asif Nadir, chairman and chief executive of Poly Peck International, has emerged as a substantial shareholder in Harland Simon, maker of computer control systems used mainly in the newspaper industry.

Mountain Dew Limited, a Cayman Islands company owned by a Trust of which Mr Nadir junior is a beneficiary, disclosed yesterday that it had taken its stake from 4.26 per cent to 17.26 per cent, at a cost of £5.6m. The news prompted a 30p gain in Harland's shares, which closed at 37p.

Mr Nadir said that the stake was a "strategic" investment for the long term. The price paid was 316p a share.

In a separate development, Harland reported that it had sold Cortronic, its corragating division, for a total of £680,000. Earlier this week, the company announced that it is at an advanced stage in negotiations to buy Electro-Voice, the drives division of Black Clawson, a US company.

Crown Communications makes offer for remaining 41.8% of LBC

CROWN COMMUNICATIONS, the former Crown Television Productions, is seeking a shareholders' offer for the 41.8 per cent of London Broadcasting Company (Holdings) that it does not already own, writes Philip Morris.

LBC operates a commercial news-based radio station in the London area. Crown acquired its 58.2 per cent stake when it merged with Chalford Communications earlier this year and the Independent Broadcasting Authority recently gave its go-ahead to bid for the rest of the equity.

The terms of the offer are 33.35 ordinary shares in Crown for every ordinary share in LBC, valuing each share at 11.62 and the whole of the group at £13.1m. There is a cash alternative of £16.75 per share.

Egerton US listing

Egerton Trust, the acquisitive construction and property group, is arranging an American Depository Receipt listing in the States. The company, whose business is split between the UK and US, which has recently been building up its Stateside aggregate interests, said yesterday that this had no bearing on the previously-mentioned possibility of seeking a listing for Egerton Inc., its American holding company.

Boost for Kerry

Pre-tax profits surged from £1.4m to £3.41m (£3.75m) at Kerry Group in the six months to June 30 on sales up 15 per cent from £14.82m to £16.92m.

The dairy produce and meat processing company is quoted on the USM. After tax of £57,000 (£60,000) and minority interest of £17,700 (£47,000) earnings per 10p share were 3.6p (2.1p). The interim dividend is raised to 0.6p (0.52p).

DIVIDENDS ANNOUNCED

	Current payment	Date of dividend	Corres-ponding dividend	Total for year	Total last year
Armstrong Equip	2.4	—	2.4	3.5	3.3
Brake Bros	—	Dec 30	0.8	—	2.7
Brit Aerospace	7.4	Nov 1	6.9	—	18.7
Cone Gold Fields	22	—	18	32	27.5
Gaskell Brood	1.5	Oct 24	2.2	—	6.8
Hill Engineering	5.5	Oct 28	4.8	—	12
Hill Group	1.4	—	1.3	—	3.9
Imperial Foods	1.7	—	1.45	—	3.5
Interlink Exp	3.65	Nov 11	3.5	6.9	5.85
Inverporvon Dis	2.25	Oct 21	1.75	—	5.75
Kerry Group	0.611*	—	0.52	—	1.65
Macra 4	2.3	Nov 14	1.675	3.9	2.8
Matthews (B)	—	—	0.625	—	1.75
Mayborn Group 5	1.31	Oct 31	1.2	—	3.5
Osprey Commu	2	Oct 20	2	3	2.54
Precious Metal Test	0.25	—	0.25	0.55	0.55
Scott Portable	2.5	Oct 21	2.15	—	7.75
Stora Enso	3.35	Oct 31	3.15	—	14.75
Wool White	—	—	2.6	—	8.75
Willis Faber	3.85	—	3.85	—	11.45

Dividends shown pence per share net except where otherwise stated. *Equivalent after allowing for scrip issue. 10m capital increased by rights and/or acquisition issues. SISIM stock SISIM quoted stock. *Third market. *For fourteen-month period. *All figures in Irish currency.

BOARD MEETINGS

	FUTURE DATES	
Armstrong Equip	Sept 22	—
Brake Bros	Sept 22	—
Brit Aerospace	Sept 22	—
Cone Gold Fields	Sept 22	—
Gaskell Brood	Sept 22	—
Hill Engineering	Sept 22	—
Hill Group	Sept 22	—
Imperial Foods	Sept 22	—
Interlink Exp	Sept 22	—
Inverporvon Dis	Sept 22	—
Kerry Group	Sept 22	—
Macra 4	Sept 22	—
Matthews (B)	Sept 22	—
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Precious Metal Test	Sept 22	—
Scott Portable	Sept 22	—
Stora Enso	Sept 22	—
Wool White	Sept 22	—
Willis Faber	Sept 22	—

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Management Buy-Out

Equity Arranged by

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MIM Development Capital Limited
Standard Chartered Bank

Banking Facilities Provided by Standard Chartered Bank

County NatWest Ventures were advised by

HAMMOND SUDDARDS
Solicitors

PEAT MARWICK MCINTOCK
Chartered Accountants

Maccles Group were advised by

SIMPSON CURTIS
Solicitors

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Stewart Wrightson integration completed**Willis Faber static at £45m**

WILLIS FABER, insurance broker, yesterday turned in marginally lower pre-tax profits of £45.16m compared with £45.55m in the six months to June 30.

The insurance companies

income of insurance companies was £25.75m (£20.17m) and the share of income of associate companies (bar Morgan Grenfell) was £12.83m (£11.49m).

Expenses, however, grew 72 per cent to £105.7m (£61.4m). Interest payable was £4.95m (£2.52m).

Mr David Palmer, chairman, pointed out in his last report to shareholders before handing over to Mr Roger Elliott in October that since those were the first interim results since the acquisition of Stewart Wrightson, direct comparisons with 1987's figures were not possible.

Revenue, excluding Morgan Grenfell, rose 43 per cent to £182.55m (£77.21m) net retained brokerage and fee income, £8.48m (£7.22m) underwriting agencies' fees and commissions, and £15.76m (£11.21m) from investment and other income.

The integration of the two businesses was now complete

and in the North American operations.

All the insurance broking subsidiaries had acquired new business in the period, often due to enhanced facilities following the merger. It added to this area in January with the acquisition for £10.57m of the remaining 50 per cent of Ratray Daffers, Leeds-based insurance broker.

Excluding the effects of currency movements, the company estimated the underlying increase in brokerage to be 4 per cent. For foreign exchange hedging programme had reduced by about £4.7m the adverse effect of the dollar's weakness.

The interim dividend is maintained at 3.85p on earnings down 30 per cent at 11.77p. See Lex

and the benefits had begun to develop, he said, particularly in

Willis Wrightson, the UK

the second half, he said.

Turnover rose from £65.88m to £87.20m. Sales of value-added turkey products, such as Crispy Crumbs Turkey Steaks, Golden Drummers and Mini Kievs, continued to grow. But sales of red meat products were depressed despite additional promotional support.

The company has decided to discontinue production of pet-food following disappointing results in test marketing. It is also ceasing to market whole chickens and has closed its lamb cutting operations.

Mr Matthews warned that the drought conditions in

North America had resulted in volatility in the animal feed market.

The tax charge was reduced to £1.6m from £2.14m. An interim dividend of 1p (0.625p) has been declared.

COMMENT

Quite simply, there were just too many whole birds around at the start of the year, so prices suffered. The industry, though not so much Matthews, put a lot of money into advertising whole turkeys over Easter and the glut continued. Prices are now better in the

second half, he said.

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The stockholding division increased profit from £1.27m to £1.88m. Reinforcements, including wire mesh manufacture, made £970,000 (£652,000) before tax. Profits from the engineering division, which makes security fencing, car body panels, labels and nameplates, advanced from £1.66m to £1.86m.

Hall declared an interim dividend of 5.5p (4.8p). The Shrewsbury-based company said some of the growth could

be attributed to acquisitions and added efficiencies. Overseas operating companies had also performed well. However, higher interest rates would have a negative effect on the second half results.

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Hall added that prospects for the rest of the year looked good and should justify the capital investment being made in additional premises and new manufacturing plant.

COMMENT

Although the City seemed impressed by Hall's results, the share price was unchanged at 89p. The group would suffer if there was a downturn in the construction and civil engineering industry, but enjoys a degree of protection both in the spread of its activities and

the fact that Rom River, one of its main competitors in the reinforcements field, is currently diverting most of its output to the Channel Tunnel. This leaves Hall free to take advantage of improved margins from the British Reinforced Concrete subsidiary, by servicing the remaining customers. Other divisions have also been trading strongly and analysts are looking for full-year pre-tax profits of up to 4.8p.

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UK COMPANY NEWS

Armstrong Equipment profit falls to £7m

By Fiona Thompson

SEVERELY underestimating the price of materials and the cost of out-sourcing components has resulted in Armstrong Equipment, engineer, reporting a slip in pre-tax profits from £7.7m to £7.1m for the year ended July 2, 1988. At the trading level profits fell from £10.5m to £9.5m.

Earnings per share fell from 12.5p to 10.5p but the final dividend is unchanged at 2.4p, making a total for the year of 3.5p (3.3p).

Armstrong, which makes or sells automotive components, industrial fastenings and light engineering products, warned

on August 15 that profits were likely to be significantly short, by £2m to £4m, of the consensus forecast level of £10m, and its share price that day fell 21p to 120p. Yesterday the shares closed 10p off at 125p.

The shortfall was due to stock-related discrepancies at the company's York shock absorber plant. Mr Roy Watts, chairman, said that after the implementation of strengthened financial reporting arrangements earlier this year, concern arose about the profitability of York as internally reported and consequently a complete stocktake was

launched.

This uncovered two things. Although the price of materials had risen substantially, the standard, rather than the new, much higher, actual cost was being charged. In addition, following a surge in demand last year for shock absorbers, the company bought in components from other suppliers at a higher price than its own, but charged the standard cost.

The end result was that in spite of sales totalling 24m at the York operation, its trading profit was only £300,000, compared with management expectations of £3m.

Mr Watts stressed that swift action had been taken to rectify the situation, including management changes and bringing in consultants to provide back-up.

Group turnover rose from £12.7m to £13.4m. The tax charge increased from 51m to £1.6m.

• COMMENT

It is the new top management team at Armstrong which uncovered the debacle at York and for this they must be given full marks. The company had staff who didn't know how to account properly is appalling, but that is behind it now. Sadly what may linger for some time is the effect of the error, as Armstrong is lumbered with contracts that are underpriced. Some 50 per cent of the automotive business is in long-term contracts. On the bright side, gearing has fallen from 51 to 25 per cent, and both the fastenings and international divisions are looking healthy. With not too much expected from automotive this time, the City is forecasting profits of £10m for this year, putting the shares on a prospective p/e of about 8.5, not cheap.

WPP boosts Belgian presence

By Nikki Tait

WPP, the acquisitive advertising agency and marketing services company, is boosting its Belgian advertising agency presence with the acquisition of Partner, a Brussels-based company, for up to £3.8m.

Partner is currently ranked number nine in Belgium with billings of about £1.22m (£1.8m). WPP says that in 1987

adjusted profits before tax were £1.25m.

WPP, through its acquisition of the US-based JWT Group last year, already has agency interests in Belgium with billings of about £1.25m. The latest acquisition will initially be known as Partner/JWT, and WPP says it will rank among the top three ad agencies in

Belgium.

WPP is paying an initial £1.25m, and a further sum, depending on performance, in 1989. The final consideration will be based on a nine times multiple of average after tax profits at Partner/JWT for the three years to end-1988. A maximum consideration of £1.25m (£1.8m) has been set on the deal.

Mayborn increases

An exchange gain of £267,000 relating to the repayment of a £1m bank loan was treated as an exceptional credit and helped Mayborn Group produce a 19 per cent improvement to £1.08m pre-tax profits for the six months to end-June.

This acquisition USM-quoted consumer products company reported turnover up marginally from £10.82m to £11.1m. Earnings per 50p share worked through at 4.2p (3.2p) and the interim dividend is lifted to 1.3p (1.2p).

D C Cook purchase

D C Cook, USM-quoted motor to retail services group, has entered the north-east England car sales market through the acquisition of the freehold properties and stock of Vic Young Garages, currently in receivership, for £75,500.

A first time contribution of £225,000 to trading profits of £1.07m (£0.64m) came from Sambier Crafts acquired in December.

The interim dividend is

raised from 2.2p to 2.5p on earnings up 61 per cent to 13.7p (8.5p).

Gaskell over £1m mark

SALES AND profits both increased by more than 60 per cent at Gaskell Broadloom, manufacturers of carpets and floor coverings, in the six months to July 1 1988. The taxable result rose from £625,000 to £1.02m, sales ahead from £22.58m to £24.77m.

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Jacques Vert expands women's wear interests

Jacques Vert expands women's wear interests

By Alice Rawsthorn

JACQUES VERT is expanding its women's wear manufacturing interests by acquiring a clothing factory in Yorkshire from Parkland, the wool textile group for £200,000 in cash.

Vert, which is quoted on the USM, has grown rapidly in recent years. It has established a chain of 16 shops to augment its wholesale business in the UK, and has increased exports to Europe and North America.

Acquisitions lift Corton

BOOSTED by acquisitions Corton Beach, mini-conglomerate, which moved up from the Third Market to the USM in June, reported interim pre-tax profits more than doubled from £206,000 to £1.25m.

In the six months to July 31 turnover increased to £47.51m (£30.9m) and after tax of £245,000 (£10.000) stated earnings per 10p share were 4.3p (2.9p). No interim dividend is being paid but the directors say that the final payment will be increased from last year's 0.5p.

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US growth planned as Macro 4 rises 34%

By Philip Coggan

MACRO 4, computer software company, yesterday revealed a 34 per cent increase in pre-tax profits to £45.5m in the year to June 30.

Last year the company abandoned a US purchase, because of the stock market crash, and there was an extraordinary debt of £200,000 relating to abortive acquisition costs.

Nevertheless, Macro 4 is spending between £900,000 (£470,000) and £1m on US expansion, opening three new regional offices and launching a full marketing programme.

Foreign exchange movements were adverse last year but the company operated a hedging programme, designed to protect it against a decline in the dollar. The programme earned Macro 4 £225,000 over the year.

Macro 4 rents software to its customers and the repetitive rental content of turnover last year was over 94 per cent, with the average monthly rental increasing from £156 to £163.

Turnover increased just over 28 per cent to £11.0m (£8.92m). Pre-tax profits were made up of operating profits of £5.2m (£3.81m) and interest received of £486,000 (£295,000). After tax of £1.13m (£1.56m), earnings per share were 15.5p (11.7p). The final dividend is 2.3p (1.675p), making a total of 3.8p (2.5p).

COMMENT
It is easy for the market to become blasé about companies with good track records, which insist on growing organically rather than via endless acquisitions. Macro 4's strength – its rental base – gives it a quality of earnings that few others can match. But another set of excellent figures yesterday left the shares unchanged at 28sp. In the short term, they may prove unexciting. This year, the company's planned investment in the US is set to bring its growth rate down to 20 per cent, rather than the 30-40 per cent to which the market is accustomed. Many British companies have burnt their fingers in the US, but Macro 4 has plenty of transatlantic experience and it seems likely that growth will be back in the 30-40 per cent range next year. On that basis, a prospective p/e of 18.5, assuming pre-tax profits of 5.7m this year, does not look demanding.

City remains cautious despite 38% profits growth

Ward White motors to £27.7m

By Maggie Urry

WARD WHITE, DIY and car parts retailer, yesterday reported a 38 per cent increase to £27.7m in profits for the six months to end-July. Mr Philip Birch, chairman, said the results reflected buoyant trading in the group's main businesses.

Sales were some 6 per cent lower at £342.5m, a decline explained by disposals. Excluding these, sales rose by 23 per cent. During the half year, the sale of three operations raised £51m and caused an extraordinary gain of £17.1m. These and earlier disposals also reduced debt, bringing the interest charge down to £1.1m (1.7m).

Mr John Sharp, finance director, said he expected balance sheet gearing at the year end to have fallen to 17 per cent, against 38 per cent last December and 82 per cent at the previous year end.

Group operating profits rose by 17 per cent to £20m. In the DIY division, sales rose 30 per cent to £123.1m and operating profits by 70 per cent to £15.6m, indicating higher margins.

The integration of Macleay's, bought in November 1987, was now complete, Mr Birch said, and the purchase in June of A G Stanley had made a post-interest contribution of around £700,000. Mr Birch said a new format for Stanley shops under the Homestyle banner would go on trial later this month.

Halfords, UK car parts business, showed a 19 per cent sales increase to £85.3m and operating profits 53 per cent up at £6.1m. Mr Birch said the bulk of the group's £50m capital expenditure plans would be directed at the UK DIY and car parts business.

In sterling terms operating profits of the US autoparts shops were barely higher at

£1.1m, although in dollar terms they rose 12 per cent to \$10.9m.

Other activities, which include Owen Owen, department stores, and businesses in the US and Sweden, contributed £2.2m to operating profits.

Philip Birch – buoyant trading in main businesses.

£6.1m, although in dollar terms they rose 12 per cent to \$10.9m.

Earnings per share rose 28 per cent to 9.2p basic and 34 per cent to 11.5p fully diluted. The interim dividend is up 15 per cent to 3p.

• COMMENT

The City's disenchantment with Ward White meant that, despite beating expectations, the shares were unchanged at 270p yesterday. Although the period of rapid sales and purchases of businesses is now largely over, with the firm establishment of the three legs, there are constant fears of further acquisitions with consequent share issues. The reduction in gearing is some comfort and there are undoubtedly more disposals to come as well as acquisitions. However, even on the more optimistic forecasts of around £25m pre-tax and a prospective p/e of under 9, there appears to be little investor interest in the shares.

Buoyant conditions boost Scottish Heritable to £4.4m

By Ray Basford

SCOOTISH HERITABLE Trust, the industrial holding company, lifted pre-tax profits 37 per cent to £4.4m during the six months to June 30 1988.

Earnings per share rose 16 per cent from 6.2p to 7.2p and directors have boosted the interim dividend from 2p to 2.5p.

UK property and house building activities benefited from the buoyant industry conditions and were the biggest contributors to the improvement.

Property development projects in London's West End were the strength behind the property division's improvement, supported by steady returns from the company's stock of flats in London and Glasgow.

Pre-tax profit from the UK housebuilding division, which operates in York, Peterborough and North Wales, rose 20 per cent, however the returns during the second half are expected to be 15 per cent

cent growth in earnings is not to be sneezed at, however, as Mr Robin Garland said yesterday the company is "not out to win the world tomorrow". An acquisition up to £50m appears well within reach and directors have been actively exploring many possibilities.

A decline in gearing from 100 per cent to about 60 per cent by the end of the year heightens the possibility of a cash acquisition. The sale of the quarrying and packaging divisions, as foreseen, which could net about £15m, would help clean up the rather confused collection of businesses.

The quarrying and packaging divisions, which are up for sale, also showed increases, although they have both been underperforming for some time.

The pyrotechnics operations lost money, in line with the previous corresponding half, however the cyclical nature of the business assures a strong contribution to the annual result, directors said.

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Scottish Heritable is a mini-conglomerate steering a more steady course than many

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TECHNOLOGY

A scarlet sign saying "4 Hours" hangs over the portable computer assembly line at Toshiba's Ome factory, on the edge of Tokyo's urban sprawl. That means four hours a day of compulsory overtime for the full-time production workers, extending their working day from 8 am to 9 pm, with an hour's lunch break.

Even the so-called part-time "housewife" workers are being asked to work two hours' overtime a day, according to Tsuneaki Okada, manager of the Ome factory. Dressed in the production line uniform of dove-grey coats and blue caps, these women fit components into Toshiba's lap-top computers from 9 am to 6 pm.

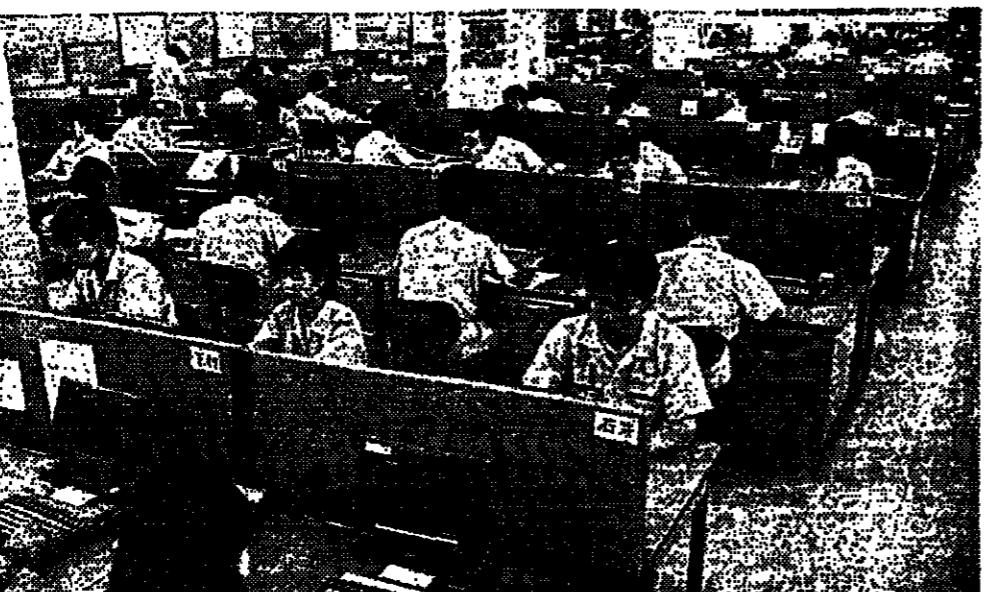
The computers are assembled by hand, although robots are used elsewhere in the factory (to make printers, for example). Okada says that robots "are not flexible enough" to cope with the short production runs and frequent changes of model which characterise computer manufacturing.

However, most employees at Ome are not manual workers but white collar engineering and administrative staff (their uniform is beige and burgundy). They work even longer hours, often from 7 am to 11 pm.

These long working days - which seem excessive even by Japanese standards - are Toshiba's way of meeting the strong international demand for its lap-top computers. Although the company did not invent portable computers, it has done more than any other to pioneer the development of personal computers which are light enough to carry and powerful enough to use as serious business machines.

Assessing the competitive position of companies in the portable computer market is difficult because there are no generally accepted definitions of such terms as portable, lap-top, luggage, transportable and mobile. Toshiba says it sold 170,000 lap-tops outside Japan last year, giving it a third of the international market. Current production levels at the Ome factory (30,000 lap-tops per month) suggest that sales may double this year.

Ironically, Toshiba is doing better in Europe, where it has no computer manufacturing facilities, than in the US, where it makes 10,000 lap-tops per month at a factory in California. Half of the lap-top computers sold in Europe last year were made by Toshiba, according to Intelligent Electronics/Datasquest, the Paris-based analysts.



Toshiba software engineers using laptop computers for conventional desktop work

The lap-tops that mean business

Clive Cookson reports on Toshiba's role in developing the portable computer

In the US, where Toshiba claims 25 per cent of the laptop market, it faces more effective competition from American manufacturers such as Zenith and Grid. The company has also suffered from adverse publicity in the US about illegal sales of submarine technology to the Soviet Union by a subsidiary, Toshiba Machine Company.

Toshiba's main rival at the heavy end of the portable market is Compaq of the US, though the American company's 20 lb "lunchbox" portable machines are less easy to lug around than Toshiba's most powerful 18 lb "briefcase" style computers.

According to the research company Rometec, Toshiba and Compaq have about 40 per cent each by value of the UK market for "mobile computers", which was worth £27m in the second quarter of 1988. This is based on a fairly wide definition of mobile, including both battery powered lap-top computers and larger transportable machines, such as Compaq's, which need to be plugged into an external power supply.

A wide range of technological improvements over the last three years has contributed to

the sudden popularity of portable computers. Most important has been the development of clear slim-line screens to replace the bulky cathode ray tube (CRT) used in conventional desk-top terminals.

Gas plasma screens give the clearest display, orange on black, which is suitable for fine computer graphics work.

Unfortunately, however, they consume too much electricity to run on batteries, so gas plasma screens are used only in the bigger, mains powered "transportable" computers.

Battery powered laptops have liquid crystal display (LCD) screens - generally blue on white. These are rapidly becoming more readable. The latest models are improved by back-lighting and their contrast is improved by rotating the pixel units by more than the conventional 90 degrees (the jargon word for this effect is super-twist). But LCD still looks fuzzier than gas plasma or CRT.

Toshiba and some of its competitors are expected to launch lap-top computers with full col-

our LCD screens within two years. A full colour gas plasma display will take perhaps two to three years, according to Tetsuya Mizoguchi, technology executive in Toshiba's computer systems group.

The miniaturisation of electronic components has also been vital for the development of portable computers. The latest memory and processor chips are far smaller than their predecessors and use less electricity. In contrast to the rapid progress towards lower power consumption, however, there has been relatively little improvement in battery performance.

Today, Toshiba adds two new models to its range of IBM-compatible portable computers (after a three-month delay caused by the world-wide shortage of memory chips).

At 16.5 lb, it is the main powered T5200, based on Intel's 8086 microprocessor running at 20 MHz (this means that the internal clock controlling the machine ticks 200 times a second). The T5200 has a gas plasma screen, an internal memory of two megabytes (MB) extendable to 8 MB and built-in hard disk storage capacity of either 40 MB or 100

MB. This combination of speed and memory should be powerful enough to run almost any software designed for desktop personal computers.

The other new model, the T1600, has a liquid crystal display (LCD) and a slower microprocessor, the Intel 80C286, operating at 12 MHz. It can run on batteries for between one and six hours and, weighing 14 lbs, it could be used on a traveller's lap. However, the T1600 may soon face formidable competition from Compaq, which is expected to announce its first battery powered computer later this year.

Now that the portable computer market has taken off, many analysts expect it to maintain an annual growth rate of 50 per cent or more for several years. Toshiba predicts that a quarter of all personal computers sold in 1990 will be portable - and the company sees itself to hold on to at least 25 per cent of that market.

Toshiba is Japan's third largest and the world's tenth largest manufacturer of electronics and electrical products, according to Fortune magazine. Like the other big Japanese electronics companies, it is changing its global business strategy in response to the long-term appreciation of the yen and pressure from Europe and the US to reduce Japan's trade surplus.

Jiichi Aoi, President of Toshiba, says: "We are shifting from the previous strategy of increasing exports from Japan to a strategy that promotes direct overseas investment and technology transfer." This involves setting up research, development and manufacturing facilities outside Japan.

Toshiba executives are planning expansion through what they call a Triad Network (presumably they are not trying to invoke the sinister image of the Chinese Triad gang). The company's network will have three arms: Toshiba in Japan (responsible for Asia), Toshiba America and Toshiba Europe (based in Dusseldorf and also responsible for Africa and the Middle East).

However, compared with other Japanese companies like NEC, Fujitsu, Sony and Hitachi, it has been slow to develop business links with and production facilities in Europe.

Today, Toshiba makes videos and televisions in Plymouth, England, and copiers and microwave ovens in France, but says it has not yet decided when and where to manufacture computers in Europe.

Meanwhile its arch rival Compaq continues to turn out portable computers at its Scottish plant near Glasgow.

Journeys mapped out on screen

THE BOSCH electrical group of West Germany is about to launch a vehicle navigation system called Travelpilot.

It will be introduced in Germany, the UK, France and Holland during the first six months of next year. The price in the UK will be about £1,500. Bosch has already won a contract from Hertz, the car rental company, to equip some 1,000 cars.

Travelpilot provides the driver with a map on a 12 cm screen, which initially shows the whole route. The map zooms in on the remaining roads to be covered as the journey proceeds.

Two miles from the destination, streets are identified and, where the information is available, such problems as one-way systems shown.

Maps will be held in digital form on CD-ROM (Compact Disc read only memory), an optical data store similar to CD music discs.

The driver plugs in a disc that covers the whole of the country - later western Europe - and enters start and destination points on a keyboard. His or her position is pin-pointed on the map as the journey proceeds (to a claimed accuracy of 30 yards in 100 miles). The direction of travel is upwards and the map rotates slightly, although it can be fixed. The system chooses the best route, but the driver can magnify his or her local detail.

Travelpilot is based on sensors, fitted to the wheels to measure distance, and an electronic compass. The two give a dead-reckoning system and Bosch says that cumulative error is corrected by reference to the internal map data.

The company believes Travelpilot's major advantage is that only on-board equipment is needed. Its immediate use is not dependent on the build-up of an external infrastructure, such as roadside radio beacons.

The price of the disc has not been fixed yet, but is unlikely to be more than £20.

Strategic Defence Initiative (SDI)

It should be able to pinpoint incoming missiles in the presence of decoys and against a background of stars and other man-made radiation.

The system, which contains 36 infrared detecting devices, will be delivered to Boeing Aerospace, prime contractor to the US Army for feasibility studies in the use of optical sensors to detect strategic missiles.

The array of sensors will be used in the focal plane of an optical telescope, with a pointing and stabilising system and digital signal processor. A wide field of view enables the system to scan considerable areas of space at long range.

Data coming out of the array cells for signal processing at rates of up to 15m operations a second. This is said to be a thousand times greater than the previous best optical surveillance systems. The task is equivalent to reading the Encyclopaedia Britannica 15 times in one second.

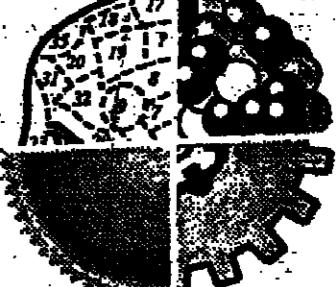
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WORTH WATCHING

Edited by

Geoffrey Charlish

Finance and education.

The full results of the 1988 Home Survey are about to be published by Datasquest.

New pattern to laser engraving

ZED INSTRUMENTS of Hemel Hempstead, Surrey, in the UK, has an improved laser engraving method that will speed up production of the flexographic printing plates widely used in wallpaper and textile printing plants. The better standard of printing could take the process into quality packaging markets.

The rubber printing rolls, sleeves and plates are often produced by laser engraving, but to get the pattern into the surface, an intermediate photographic film image has been used. The film image is scanned optically and the information used to drive a carbon dioxide laser engraving head.

ZED instruments has developed a system in which a computer-aided design (CAD) computer is coupled straight into a cutting head powered by a carbon dioxide laser from Electrol, part of The 900 Group.

Apart from saving time, the system yields better quality because there is no potentially degrading intermediate image and no problems with dust on the film.

An important advantage is that the CAD system can be remote from the production plant and the image sent over a phone line. Software for many popular CAD systems is available.

CONTACTS: Bosch, UK office, 0895 200000; Home Survey, US, 212 555 7520; Datasquest, London office, 379 0557 or in the US on (408) 457 8000; ZED Instruments, UK, 0822 226977.



ENERGY BLUEPRINT HELPING BUSINESS MAKE MORE OF ITS ENERGY

Hotel stores up benefits

Initially developed for use in the home, GEC Nightstar boilers that use low-cost night-rate electricity are now benefiting a wide range of commercial premises.

These boilers first appeared some five

years ago as a replacement for existing home central heating systems to meet a demand caused especially by the high cost and insecurity of oil supplies.

Success with domestic applications

led to the development of boilers in a range of sizes suitable for commercial use. Larger installations can be supplied by connecting boilers in tandem.

Premises switching to Nightstar from oil or solid fuel benefit from the cleanliness of electricity and the ending of fuel storage and delivery problems. The compact Nightstar unit can normally be accommodated within the premises, often in place of the previous boiler.

Typical of commercial users to benefit is The Nash Hotel on the edge of the South Downs at Steyning, West Sussex, where heating and hot water used to be supplied by an oil-fired boiler and two Aga cookers.

After advice from South Eastern Electricity, the hotel installed two Nightstar electric boilers for space heating with separate storage cylinders for hot water. It was a great improvement.

The Nightstar boilers, directly supplying the existing distribution pipework and radiators, have a core of special heat-retaining bricks in a well-insulated casing. Overnight the bricks are heated by electric elements passing through them. When heat is required, air is circulated over the bricks and through a heat exchanger, which transfers the heat to the radiators.

So satisfied was the proprietor that she has now replaced the Aga cookers with an all-electric kitchen.

The electric boiler system has not only reduced heating costs but proved very reliable with no need for a regular maintenance contract, released space for a building extension and, not least, eliminated the smell of oil.

For more information tick coupon box 1.

Spotlight on heat savings

Quartz linear heaters installed by Sunbury Metal Pressings Ltd of Southall, Middlesex, have proved the value of this new concept in space heating.

Unlike ordinary heaters, quartz linear heaters emit short wavelength energy in a 'spotlight' of instant heat, so energy is not wasted warming surrounding unused areas of a building.

When Sunbury Metal Pressings moved into adjacent premises, they originally intended to install gas-fired overhead fan heaters. The most economical and efficient solution, however, turned out to be 30kW of quartz linear heating - a third of the load required for a gas-fired warm air system.

With quartz linear response is immediate and no pre-heating is needed. After a pre-set period, the nine individually controlled heaters switch to half-hour for maximum economy.

Quick to install, the system has improved the work environment and running cost savings are calculated to be around £1,000 per annum.

For more information tick coupon box 2.



Ice rink warms pool

Energy savings of £60,000 a year have been achieved from a heat recovery system installed at Thamesdown Borough Council's Link Centre at West Swindon, built two years ago to provide a comprehensive range of sporting and leisure facilities, from squash to snooker. The centre was awarded the 1987 national BETA trophy for energy efficiency in buildings over 1,000 square metres.

A competition-size ice rink at the centre is the main source of heat for the remainder of the complex. Heat recovered from the ice rink's refrigeration compressors is used to heat the water in the swimming pool and also for space heating and hot water services.

The swimming pool hall has two heat recovery dehumidifiers and the pool is equipped with ozone water treatment which eliminates eye irritation and the 'swimming pool smell' associated with

chlorine water treatment. Capital cost of the chillers, pumps and pipework for the ice rink heat recovery plant was some £39,000. Annual energy savings were

originally estimated at £40,000 but practice have been 50% higher than this.

For more information tick coupon box 3.

Please send me leaflets/information on the following topics:

1. Electric boilers.

2. Quartz linear heaters.

3. Electric heat recovery systems.

Company/Address _____

Postcode _____

Please send the coupon to: Electricity Publications, PO Box 2, Central Way, Feltham, Middlesex TW14 0TG.

PLAN ELECTRIC

Energy for Life

The Electricity Council, England and Wales

5

UNIT TRUST INFORMATION SERVICE

FT UNIT TRUST INFORMATION SERVICE

Ref	Star	Price	Yield	Ref	Star	Price	Yield	Ref	Star	Price	Yield	Ref	Star	Price	Yield
Equity & Law Unit Life Assurance Co Ltd				BNP Paribas (London) Ltd				Investment Services Ltd				London Home			
Victor Reg. Projects (HNL) Smaller, Inc.				BNP International Fund Ltd				Global Corp Fund				20 City Road, EC2Y 2AY			
Par Eastern Fund				BNP International Fund Ltd				Global Fund				100-102, 104-106, 108-110, 112-114, 116-118, 120-122, 124-126, 128-130, 132-134, 136-138, 140-142, 144-146, 148-150, 152-154, 156-158, 160-162, 164-166, 168-170, 172-174, 176-178, 180-182, 184-186, 188-190, 192-194, 196-198, 198-200, 202-204, 206-208, 210-212, 214-216, 218-220, 222-224, 226-228, 230-232, 234-236, 236-238, 240-242, 244-246, 246-248, 250-252, 254-256, 256-258, 260-262, 264-266, 266-268, 270-272, 274-276, 276-278, 280-282, 282-284, 284-286, 286-288, 288-290, 290-292, 292-294, 294-296, 296-298, 298-300, 300-302, 302-304, 304-306, 306-308, 308-310, 310-312, 312-314, 314-316, 316-318, 318-320, 320-322, 322-324, 324-326, 326-328, 328-330, 330-332, 332-334, 334-336, 336-338, 338-340, 340-342, 342-344, 344-346, 346-348, 348-350, 350-352, 352-354, 354-356, 356-358, 358-360, 360-362, 362-364, 364-366, 366-368, 368-370, 370-372, 372-374, 374-376, 376-378, 378-380, 380-382, 382-384, 384-386, 386-388, 388-390, 390-392, 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1296-1297, 1297-1298, 1298-1299, 1299-1300, 1300-1301, 1301-1302, 13			

LONDON SHARE SERVICE

AMERICANS—Contd

1988	Low	Stock	Price	per	No.	CWY	YTD
274	43	Time Inc. \$1	56.3	1.5	100	1988	1.0
505	43	Texaco Inc. \$1	51.00	1.0	100	1988	1.0
103	22	Transamerica \$1	56.10	2.2	100	1988	2.2
147	14	Trans World Corp.	12.00	2.2	100	1988	2.2
151	15	USA \$1	4.25	4.25	43	1988	4.25
23	17	Ulti. Technologies	21.00	2.2	51	1988	2.2
22	16	United Microelectronics	24.00	2.2	43	1988	2.2
165	12	Whitney \$1	14.50	2.2	42	1988	2.2
324	18	Woolworth \$3.2	29.75	2.2	32	1988	2.2

BUILDING, TIMBER, ROADS—Contd

1988	Low	Stock	Price	per	No.	CWY	YTD
100	22	Worley \$1	51.00	1.0	100	1988	1.0
103	22	Worley \$1	51.00	1.0	100	1988	1.0
105	23	Worley \$1	51.00	1.0	100	1988	1.0
149	14	Worley \$1	51.00	1.0	100	1988	1.0
157	15	Worley \$1	51.00	1.0	100	1988	1.0
173	17	Worley \$1	51.00	1.0	100	1988	1.0
223	22	Worley \$1	51.00	1.0	100	1988	1.0
165	12	Worley \$1	51.00	1.0	100	1988	1.0
324	18	Worley \$1	51.00	1.0	100	1988	1.0

CANADIANS

1988	Low	Stock	Price	per	No.	CWY	YTD
209	173	ABM Gold Corp. 1	17.60	1.0	100	1988	1.0
322	111	Abbot Corp. 1	13.00	1.0	100	1988	1.0
103	35	Abitibi Paper Co.	9.40	2.2	100	1988	2.2
479	14	Abitibi Paper Co.	9.40	2.2	100	1988	2.2
149	14	Artemis	15.0	2.2	100	1988	2.2
157	15	Artemis	15.0	2.2	100	1988	2.2
173	17	Artemis	15.0	2.2	100	1988	2.2
202	51	Avon Nov. \$1	7.62	2.2	71	1988	2.2
187	15	B&C Value \$1	17.75	2.2	100	1988	2.2
134	10	B&C Value \$1	17.75	2.2	100	1988	2.2
226	189	Baybreakers Res.	2.00	2.2	100	1988	2.2
111	21	Bell & Howell \$1	9.50	2.2	100	1988	2.2
211	40	Bell & Howell \$1	9.50	2.2	100	1988	2.2
223	32	Bell & Howell \$1	9.50	2.2	100	1988	2.2
173	32	Bell & Howell \$1	9.50	2.2	100	1988	2.2
226	280	Bell & Howell \$1	9.50	2.2	100	1988	2.2
165	262	Bell & Howell \$1	9.50	2.2	100	1988	2.2
227	218	Bell & Howell \$1	9.50	2.2	100	1988	2.2
173	218	Bell & Howell \$1	9.50	2.2	100	1988	2.2
202	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
187	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
134	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
226	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
173	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
226	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
173	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
226	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
173	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
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226	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
173	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
226	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
173	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
226	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
173	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
226	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
173	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
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226	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
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226	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
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173	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
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173	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
226	119	Bell & Howell \$1	9.50	2.2	100	1988	2.2
173	119	Bell & Howell \$1	9.50	2.2	100	1	

LONDON SHARE SERVICE

A selection of Options traded is given on the London Stock Exchange Report Page

service is available to every Company dealt in on Stock Exchanges throughout the United Kingdom for a fee of £348 per annum for each security.

LONDON STOCK EXCHANGE

FT-ACTUARIES SHARE INDICES

These Indices are the joint compilation of the Financial Times, the Institute of Actuaries and the Faculty of Actuaries

EQUITY GROUPS & SUB-SECTIONS

Figures in parentheses show number of stocks per section

	Tuesday September 13 1988							Mon	Fri	Thu	Year
	Index No.	Day's Change %	Est. Earnings Yield % (Max)	Gross Div Yield % (Act at 25%)	Est. P/E Ratio (Net)	Adj. to date	Index No.	Index No.	Index No.	Index No.	Year ago (approx.)
1 CAPITAL GOODS (21)	759.05	+0.5	18.91	4.29	11.37	17.49	755.33	752.44	754.97	758.01	1,775.50
2 Building Materials (29)	124.74	+0.1	18.92	4.30	11.37	17.50	125.75	125.83	125.90	126.36	1,775.50
3 Contracting, Construction (37)	152.28	+0.3	12.32	3.45	11.52	29.01	151.22	151.39	152.09	152.50	1,775.50
4 Electrical (12)	272.36	+0.2	9.71	4.93	12.49	53.78	264.11	264.22	264.23	264.23	1,775.50
5 Electronics (29)	165.85	+1.3	18.75	3.75	11.37	40.42	163.51	162.94	162.91	162.26	1,775.50
6 Metals and Metal Forming (7)	141.95	+0.4	18.53	4.19	11.74	7.95	144.24	145.97	146.70	151.33	1,775.50
7 Motors (16)	263.75	+0.2	12.37	5.01	9.32	7.06	262.44	262.44	264.40	260.38	1,775.50
8 Other Industrial Materials (23)	1248.33	+0.3	9.56	4.63	12.48	30.84	124.02	124.03	127.01	167.93	1,775.50
9 OTHER GROUP (185)	1027.91	+0.4	9.69	3.88	13.03	19.52	1023.49	1023.49	1021.27	1310.56	1,775.50
10 Other Industrial Materials (23)	1161.03	+0.3	11.01	3.84	11.45	20.86	1057.59	1057.63	1064.22	1105.59	1,775.50
11 Food Manufacturing (21)	913.54	+0.5	9.81	4.11	13.13	20.99	904.99	904.99	904.99	1018.37	1,775.50
12 Leisure (30)	1284.22	+0.4	10.44	4.44	12.19	20.78	1275.24	1275.24	1273.72	1301.72	1,775.50
13 Packaging & Paper (17)	2284.43	+0.4	9.90	4.65	13.87	73.53	2271.59	2274.55	2282.25	2282.24	1,775.50
14 Printing & Publishing (18)	1242.20	+0.7	11.18	4.47	11.76	15.59	731.56	731.56	724.21	1064.28	1,775.50
15 Stores (34)	533.31	+0.2	12.91	5.10	9.99	12.49	516.37	517.27	516.49	823.22	1,775.50
16 Textiles (16)	1863.37	+0.3	11.61	4.61	18.51	20.21	1858.89	1858.85	1859.55	1122.41	1,775.50
17 OTHER GROUPS (93)	1011.96	+0.2	9.76	4.27	14.13	18.11	1005.64	1006.34	1028.17	1701.36	1,775.50
18 Agencies (19)	1032.22	+0.7	12.38	4.93	9.69	20.79	1028.22	1028.22	1028.22	1405.83	1,775.50
19 Chemicals (21)	1286.52	+0.7	12.38	4.93	9.69	20.79	1278.52	1278.52	1278.52	1405.83	1,775.50
20 Conglomerates (13)	1045.47	+0.7	12.38	4.93	9.69	20.79	1040.55	1040.55	1040.55	1221.41	1,775.50
21 Shipping & Transport (12)	1045.47	+0.7	12.38	4.93	9.69	20.79	1040.55	1040.55	1040.55	1221.41	1,775.50
22 Telephone Networks (2)	1182.23	+0.7	11.91	4.98	9.57	24.75	1173.19	1169.99	1172.45	1665.05	1,775.50
23 Metalworking (26)	1225.43	+0.5	10.55	4.19	11.79	19.77	1220.84	1218.85	1218.17	1102.99	1,775.50
24 INDUSTRIAL GROUP (488)	1733.29	+2.4	10.95	6.25	11.70	64.62	1693.19	1693.40	1697.33	2109.74	1,775.50
25 Oil & Gas (2)	1723.72	+0.8	10.86	4.48	11.77	23.54	1784.62	1802.51	1805.34	1284.50	1,775.50
26 500 SHARE INDEX (500)	972.72	+0.8	10.86	4.48	11.77	23.54	978.42	982.51	985.34	1026.91	1,775.50
27 FINANCIAL GROUP (122)	665.38	+0.4	9.47	3.47	10.55	21.88	660.75	660.82	660.82	834.36	1,775.50
28 Insurance (11) (8)	1004.22	+0.7	12.44	5.44	9.98	20.38	915.42	915.99	914.46	1026.48	1,775.50
29 Insurance (Composite) (7)	518.36	+0.4	6.03	3.43	7.51	10.45	516.42	516.42	515.44	646.38	1,775.50
30 Insurance (Brokers) (7)	181.99	+0.5	10.43	6.93	12.41	32.63	914.05	907.89	923.49	1194.34	1,775.50
31 Merchant Banks (11)	319.40	+0.2	4.49	3.74	7.09	10.24	318.81	318.54	319.59	494.10	1,775.50
32 Property (51)	1161.07	+0.6	5.71	2.78	22.45	16.08	1153.91	1153.91	1158.76	1307.13	1,775.50
33 Other Financial (30)	535.12	+0.3	10.99	5.53	11.45	20.24	525.76	525.76	531.55	334.74	1,775.50
34 Investment Trusts (78)	688.67	+0.4	3.18	3.18	8.43	14.93	688.12	688.42	692.47	1026.43	1,775.50
35 Mining Finance (2)	521.11	+2.3	10.84	3.81	11.15	22.46	501.51	515.25	508.53	1,775.50	1,775.50
36 Overseas Traders (8)	1173.28	+0.4	9.88	4.76	12.80	35.31	1178.19	1182.17	1185.48	1223.48	1,775.50
37 ALL-SHARE INDEX (718)	910.61	+0.7	4.35	-	-	-	901.25	903.65	1181.87	-	1,775.50
38 FT-SE 100 SHARE INDEX	1756.3	+11.7	1761.8	1753.3	1744.6	1738.4	1759.8	1756.1	1768.0	2264.5	1,775.50

FIXED INTEREST

AVERAGE GROSS REDEMPTION YIELDS

Tue Sep 13

Mon

Sep 12

Sep 11

Sep 10

Sep 9

Sep 8

Sep 7

Sep 6

Sep 5

Sep 4

Sep 3

Sep 2

Sep 1

Year ago (approx.)

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COMMODITIES AND AGRICULTURE

S Africa cuts strategic oil stockpile, says monitor

By Peter Montagnon, World Trade Editor

SOUTH AFRICA has sharply run down its strategic stockpile of oil, to release foreign exchange to meet debt-service and other balance-of-payments requirements, a leading independent monitor of the country's oil supplies said.

The Shipping Research Bureau, based in The Netherlands, said in its report that the stockpile, the level of which is a state secret closely-guarded by Pretoria, may total only about 7m tonnes to 8m tonnes, enough to cover about six to seven months of crude-oil consumption and less than half earlier estimates.

The report shows South Africa has maintained ready access to oil supplies in spite of export embargoes, although the secrecy surrounding its oil trade has increased and the number of suppliers, traders and shippers involved has dwindled.

Mr Jaap Woldendorp, a bureau director, said South Africa was paying a premium of less than \$1 above market prices for its crude oil, compared with about \$8 at the turn of the decade when supplies from Iran were halted.

This may partly reflect the glut on world markets but the bureau believes a further tightening of limits on oil

supply to South Africa is now feasible and could disrupt the country's oil procurement.

In 1986 and 1987 the bureau identified 63 tankers which, apparently, delivered about 13.4m tonnes of oil to South Africa, about half the country's crude-oil import needs.

A further 17 deliveries amounting to 4.3m tonnes were identified in the first eight months of last year.

Norwegian shipping companies figure prominently in the list of countries the companies of which were involved in shipping the oil. However, this activity apparently ceased after July last year when a Norwegian law prohibiting transport of oil to South Africa came into effect.

The slack was apparently taken up by shipping companies in Greece and Hong Kong, said Mr Mike Terry, of the Anti-Apartheid Movement.

The main countries supplying the oil in 1985-86 were Brunel and several Gulf states, including, particularly, the United Arab Emirates, all of which endorse the international oil embargo on North Sea oil to South Africa.

Oil to South Africa. Shipping Research Bureau, PO Box 11898 1001 GW Amsterdam, The Netherlands.

UK farm minister says world trade reform unlikely without conciliation

By Bridget Bloom, Agriculture Correspondent

THERE COULD BE little hope for reform of international trade in agriculture unless the European Community, the US and Japan all took a more conciliatory attitude to the talks under way in the General Agreement on Tariffs and Trade, Mr John MacGregor, UK Minister of Agriculture, said yesterday.

Mr MacGregor was speaking in Tokyo. He is visiting Japan before beginning a trade promotion in South-east Asia.

He said the proposals on farm reform submitted to

Meanwhile, the AAM issued copies of correspondence with the UK's Energy Department on a consignment of North Sea oil from Stilum Voe terminal. The AAM alleged this consignment reached South Africa after being sold through intermediaries.

Mr Robert Hughes, the Labour MP who chairs the AAM, yesterday wrote to Mr Cecil Parkinson, Energy Secretary.

Mr Hughes accused the department of inadequately investigating this sale. The department had simply ensured that the contract for the initial sale by Shell UK to Sumitomo of Japan included a clause requiring Sumitomo to abide by UK limits on oil sales.

Mr Hughes said the department's failure to investigate further "means that there are no effective restrictions on the export of North Sea oil to South Africa via third parties and it is therefore clearly misleading for Her Majesty's Government to argue that it is imposing an embargo on the export of North Sea oil to South Africa."

Oil to South Africa. Shipping Research Bureau, PO Box 11898 1001 GW Amsterdam, The Netherlands.

KL cocoa futures upset Malaysians

By Wong Sulong, in Kuala Lumpur

MALAYSIAN COCOA traders are disappointed that the cocoa futures contract launched on the Kuala Lumpur Commodity Exchange five weeks ago has fallen into the doldrums.

They attribute the dull conditions to the lack of participation from cocoa manufacturers in the west, and to the plummeting prices on the London and New York terminals.

The cocoa contract got off to an encouraging start when 388 lots of 10 tonnes each were traded on its launch date on August 8. However, since then turnover has fallen to fewer than 100 lots daily.

More significantly, the open positions have been dwindling from about 800 lots at the end of last month to fewer than 400 lots yesterday.

This indicates that few fresh positions are being created, while operators are liquidating to get out of the market to await fresh leads.

A KLCE trader said: "We need the western manufacturers to set the market trend and provide the liquidity, and it's disappointing they are holding back."

The trader said the contract largely resembled the New York contract in specifications and currency. Another reason for the bearish sentiments is the lack of progress at the current International Cocoa Organisation (ICO) meeting in London.

However, Mr Syed Jabbar Shahabuddin, KLCE chief executive, was taking a longer view on the cocoa contract. He said five weeks was too short a period to pass judgment on its performance.

Japan's proposal erred by focusing too hard on the exporters of surplus commodities rather than on the all round picture which included very high rates of internal subsidy such as Japan itself practised.

The Gatt negotiations had now entered a critical phase, Mr MacGregor said. It was vitally important that in the next few months of preliminary to the mid-term review of the talks, all three parties should make compromises.

The talks are to be held in Montreal in December.

Britain's hope was that, while it was not necessary to set specific targets or dates, Montreal must make the objective clear.

This should be a commitment to long-term reductions in support and protection, with an agreement on some form of freeze, to be followed by further cuts, the minister said.

WEEKLY METALS PRICES

All prices as supplied by Metal Bulletin (last week's prices in brackets).

ANTIMONY: European free market, 99.6 per cent, \$ per tonne, in warehouse, 2,190-2,230 (2,175-2,225).

BISMUTH: European free market, min 99.99 per cent, \$ per lb, tonnes lots in warehouse, 315-328 (310-325).

CADMIUM: European free market, min. 99.5 per cent, \$ per lb, in warehouse, ingots

14.15-14.25 (13.5-13.5).

SELENIUM: European free market, min. 99.5 per cent, \$ per lb, in warehouse, 3,650-3,700 (3,600-3,700).

TUNGSTEN ORE: European free market, standard min. 65 per cent, \$ per tonne unit (10 kg) WO, cit, 52-61 (51-60).

VANADIUM: European free market, min. 98 per cent, VO, cit, 5.60-6.10 (5.40-6.00).

URANIUM: Nucexco exchange value, \$ per lb, UO, 14.15 (14.75).

LONDON MARKETS

COFFEE prices fell yesterday following reports of rain in southern Brazil. Although the coffee growing areas have remained dry, dealers are predicting steeper price declines if there is significant rain. There is also nervousness about International Coffee Organisation (ICO) talks next week which will hopefully succeed in setting a new global export quota, but they expect the negotiations to be even more difficult than in the past. Cocoa prices touched new lows before recovering to close ahead on the day after some short covering. The International Cocoa Organisation talks appear almost stalemate. On the LME copper continued its recent rally, following further strength on Comex and some borrowing interest (traders buying cash and selling forward).

SPOT MARKETS

Crude oil (barrel FOB September) + or -

Dubai \$11.50-1.65q + 0.70

Singapore Blend \$12.10-1.24q + 0.70

WTI (1st com) \$14.45-4.49q + 0.60

Oil products (NWE prompt delivery per tonne CIF) + or -

Premium Gasoline \$165-167 + 1

Gas Oil \$120-121 + 0.24

Heavy Fuel Oil \$83-84 + 0.35

WTI (1st com) \$125-131 + 1

Petroleum Argus Estimates

Other + or -

Gold (per troy oz) \$400-23 + 0.50

Silver (per troy oz) 6.45 + 0.45

Platinum (per troy oz) \$521.50 + 4.35

Palladium (per troy oz) \$121.25 -0.50

Aluminum (free market) \$240 -125

Copper (US Producer) 111.75-113.25

Nickel (free market) 37c -

Molybdenum (free market) \$40c + 20

Tin (Kuala Lumpur market) 18.50r

Tin (New York) 346.75c + 0.75

Zinc (Euro. Prod. Price) \$131.25

Zinc (US Prime Western) 65.5c

Cupro (live weight) 112.65q -0.24

Sheep (dead weight) 199.75q -5.04*

Pigs (live weight) 65.54p + 0.88*

London daily sugar (raw) \$258.46 + 0.88

London daily sugar (white) \$250.08

Tate and Lyle spot price \$250.00

Barley (English feed) \$110.5r -1.0

Maize (US No. 3 yellow) \$127r -1.0

Wheat (US Dark Northern) \$122.25 + 0.50

Rubber (spot) 67.30p -1.00

Rubber (COT) 74.00p -1.00

Rubber (NBR) 74.00p -1.00

Rubber (XL RSS No 1 Oct) \$21.0m -4.5

Cocoa oil (Philippines) \$54.00s -4.5

Cocoa oil (Malaysia) \$45.40s -5

Cocoa (Philippines) \$38s -4

Soybeans (US) \$210 -3

Cotton "A" index 58.65c -0.25

Wool (64s Super) \$635p + 5

C 1 tonne unless otherwise stated. p-previous, q-quarterly, m-monthly, f-future, e-Sept/Oct, w-Oct/Nov, v-Vest/Dec, m-Month Commission average, t-totals, f-futures, p-physical market, *-CIF Rotterdam, **-London physical market, SCIF Rotterdam. *-Bullock market close, m-Malaysian cents/kg.

Turnover lots of 100 tonnes.

Turnover lots of

NEW YORK STOCK EXCHANGE COMPOSITE PRICES

4pm prices September 13

Continued on Page 45

Have your
and delivery

الصلب، في الم

Continued from previous Page

12 Month High	12 Month Low	Stock	P/E 52w			Close Prev. Close/Close			P/E 52w			Close Prev. Close/Close			P/E 52w			Close Prev. Close/Close												
			Div.	Yield	100%High	Low	Close	Prev.	Close	Div.	Yield	100%High	Low	Close	Prev.	Close	Div.	Yield	100%High	Low	Close	Prev.	Close							
Continued from previous Page																														
40	57	RochTl	2.72	6.7	73	45	47.2	47.2	47.2	-	-	40	22.2	Syco	32	7.2	22	521	363	347	35	-	40	25.5	UnivCp	125	44.8	26	29	26.5
124	55	Rohr	2.6	5.2	12	11	59	54	54	-	-	41	3.4	Synd	304	20	8	54	54	54	54	-	41	27.1	Univ	25	104.5	30	30	27.5
204	144	RohrCr	1.54	9.2	15	12	20	20	20	-	-	42	6.5	TCH	34	11	201	78	78	78	-	42	12.1	Univ	140	27.1	22	112	112	
10	145	RohrCr	1.54	9.2	15	12	20	20	20	-	-	43	2.5	TCH	142	60	62	712	251	251	251	-	43	5.4	Univ	140	6.4	4	4	
46	47	Roofer	1.14	1.74	105	55	82	82	82	-	-	44	5.5	TCH	142	39	147	10	10	10	-	44	7.3	Univ	40	8.2	14	216		
364	24	Rofers	1.12	3.3	111	115	34	33	33	-	-	45	2.5	TCH	142	22	70	450	224	224	224	-	45	7.3	Univ	40	1.1	1	4	
243	172	Rofers	1.12	7.7	225	304	20	20	20	-	-	46	2.5	TCH	142	22	70	450	224	224	224	-	46	7.3	Univ	40	2.1	224	224	
204	124	Rofers	1.12	5.2	20	17	21	17	17	-	-	47	2.5	TCH	142	39	147	10	10	10	-	47	10.4	USACM	1	11.1	53	54	10.5	
395	184	Rofers	1.12	2.3	20	18	35	35	35	-	-	48	2.5	TCH	142	39	147	10	10	10	-	48	5.1	USLFE	125	5.1	57	57		
93	53	Rofers	1.12	1.7	175	65	65	65	65	-	-	49	2.5	TCH	142	39	147	10	10	10	-	49	5.1	USLFE	125	5.1	57	57		
131	54	RoyD	6.82	8.1	7	5570	105	105	105	-	-	50	37	TW	100	22	19	1462	454	454	454	-	50	5.1	USLFE	125	5.1	57	57	
132	5	RoyD	6.82	8.1	7	5570	105	105	105	-	-	51	3.5	TW	100	22	19	1462	454	454	454	-	51	5.1	USLFE	125	5.1	57	57	
94	5	RoyD	6.82	8.1	7	5570	105	105	105	-	-	52	3.5	TW	100	22	19	1462	454	454	454	-	52	5.1	USLFE	125	5.1	57	57	
346	14	Rubin	38	10	40	40	24	24	24	-	-	53	1.5	Tandem	182	35	15	285	88	88	88	-	53	1.5	USLFE	125	3.5	35	35	
44	172	RueBr	40	22	8	185	18	18	18	-	-	54	2.5	Tandy	180	14	12	12	12	12	12	-	54	2.5	USLFE	125	2.5	25	25	
203	104	RueBr	40	4.4	21	32	134	134	134	-	-	55	1.5	Tandy	180	14	12	12	12	12	12	-	55	1.5	USLFE	125	1.5	15	15	
384	105	RueBr	40	4.4	21	32	134	134	134	-	-	56	2.5	Tandy	180	14	12	12	12	12	12	-	56	2.5	USLFE	125	2.5	25	25	
204	124	RueBr	40	5.2	20	17	21	17	17	-	-	57	1.5	Tandy	180	14	12	12	12	12	12	-	57	1.5	USLFE	125	1.5	15	15	
115	5	RueBr	40	5.2	20	17	21	17	17	-	-	58	2.5	Tandy	180	14	12	12	12	12	12	-	58	2.5	USLFE	125	2.5	25	25	
116	5	RueBr	40	5.2	20	17	21	17	17	-	-	59	2.5	Tandy	180	14	12	12	12	12	12	-	59	2.5	USLFE	125	2.5	25	25	
117	5	RueBr	40	5.2	20	17	21	17	17	-	-	60	2.5	Tandy	180	14	12	12	12	12	12	-	60	2.5	USLFE	125	2.5	25	25	
118	5	RueBr	40	5.2	20	17	21	17	17	-	-	61	2.5	Tandy	180	14	12	12	12	12	12	-	61	2.5	USLFE	125	2.5	25	25	
119	5	RueBr	40	5.2	20	17	21	17	17	-	-	62	2.5	Tandy	180	14	12	12	12	12	12	-	62	2.5	USLFE	125	2.5	25	25	
120	5	RueBr	40	5.2	20	17	21	17	17	-	-	63	2.5	Tandy	180	14	12	12	12	12	12	-	63	2.5	USLFE	125	2.5	25	25	
121	5	RueBr	40	5.2	20	17	21	17	17	-	-	64	2.5	Tandy	180	14	12	12	12	12	12	-	64	2.5	USLFE	125	2.5	25	25	
122	5	RueBr	40	5.2	20	17	21	17	17	-	-	65	2.5	Tandy	180	14	12	12	12	12	12	-	65	2.5	USLFE	125	2.5	25	25	
123	5	RueBr	40	5.2	20	17	21	17	17	-	-	66	2.5	Tandy	180	14	12	12	12	12	12	-	66	2.5	USLFE	125	2.5	25	25	
124	5	RueBr	40	5.2	20	17	21	17	17	-	-	67	2.5	Tandy	180	14	12	12	12	12	12	-	67	2.5	USLFE	125	2.5	25	25	
125	5	RueBr	40	5.2	20	17	21	17	17	-	-	68	2.5	Tandy	180	14	12	12	12	12	12	-	68	2.5	USLFE	125	2.5	25	25	
126	5	RueBr	40	5.2	20	17	21	17	17	-	-	69	2.5	Tandy	180	14	12	12	12	12	12	-	69	2.5	USLFE	125	2.5	25	25	
127	5	RueBr	40	5.2	20	17	21	17	17	-	-	70	2.5	Tandy	180	14	12	12	12	12	12	-	70	2.5	USLFE	125	2.5	25	25	
128	5	RueBr	40	5.2	20	17	21	17	17	-	-	71	2.5	Tandy	180	14	12	12	12	12	12	-	71	2.5	USLFE	125	2.5	25	25	
129	5	RueBr	40	5.2	20	17	21	17	17	-	-	72	2.5	Tandy	180	14	12	12	12	12	12	-	72	2.5	USLFE	125	2.5	25	25	
130	5	RueBr	40	5.2	20	17	21	17	17	-	-	73	2.5	Tandy	180	14	12	12	12	12	12	-	73	2.5	USLFE	125	2.5	25	25	
131	5	RueBr	40	5.2	20	17	21	17	17	-	-	74	2.5	Tandy	180	14	12	12	12	12	12	-	74	2.5	USLFE	125	2.5	25	25	
132	5	RueBr	40	5.2	20	17	21	17	17	-	-	75	2.5	Tandy	180	14	12	12	12	12	12	-	75	2.5	USLFE	125	2.5	25	25	
133	5	RueBr	40	5.2	20	17	21	17	17	-	-	76	2.5	Tandy	180	14	12	12	12	12	12	-	76	2.5	USLFE	125	2.5	25	25	
134	5	RueBr	40	5.2	20	17	21	17	17	-	-	77	2.5	Tandy	180	14	12	12	12	12	12	-	77	2.5	USLFE	125	2.5	25	25	
135	5	RueBr	40	5.2	20	17	21	17	17	-	-	78	2.5	Tandy	180	14	12	12	12	12	12	-	78	2.5	USLFE	125	2.5	25	25	
136	5	RueBr	40	5.2	20	17	21	17	17	-	-	79	2.5	Tandy	180	14	12	12	12	12	12	-	79	2.5	USLFE	125	2.5	25	25	
137	5	RueBr	40	5.2	20	17	21	17	17	-	-	80	2.5	Tandy	180	14	12	12	12	12	12	-	80	2.5	USLFE	125	2.5	25	25	
138	5	RueBr	40	5.2	20	17	21	17	17	-	-	81	2.5	Tandy	180	14	12	12	12	12	12	-	81	2.5	USLFE	125	2.5	25	25	
139	5	RueBr	40	5.2	20	17	21	17	17	-	-	82	2.5	Tandy	180	14	12	12	12	12	12	-	82	2.5	USLFE	125	2.5	25	25	
140	5	RueBr	40	5.2	20	17	21	17	17	-	-	83	2.5	Tandy	180	14	12	12	12	12	12	-	83	2.5	USLFE	125	2.5	25	25	
141	5	RueBr	40	5.2	20	17	21	17	17	-	-	84	2.5	Tandy	180	14	12	12	12	12	12	-	84	2.5	USLFE	125	2.5	25	25	
142	5	RueBr	40	5.2	20	17	21	17	17	-	-	85	2.5	Tandy	180	14	12	12	12	12	12	-	85	2.5	USLFE	125	2.5	25	25	
143	5	RueBr	40	5.2	20	17	21	17	17	-	-	86	2.5	Tandy	180	14	12	12	12	12	12	-	86	2.5	USLFE	125	2.5	25	25	
144	5	RueBr	40	5.2	20	17	21	17	17	-	-	87	2.5	Tandy	180	14	12	12	12	12	12	-	87	2.5	USLFE	125	2.5	25	25	
145	5	RueBr	40	5.2	20	17	21	17	17	-	-	88	2.5	Tandy	180	14	12	12	12	12	12	-	88	2.5	USLFE	125	2.5	25	25	
146	5	RueBr	40	5.2	20	17	21	17</td																						

Sales figures are unofficial. **Yearly highs and lows** reflect the previous 52 weeks plus the current week, but not the latest trading day. Where a split or stock dividend amounting to 25 percent or more has been paid, the year's high-only range and dividend are shown for the new stock only. Unless otherwise stated, **rates of dividend** are annual disbursements based on the latest declaration. **d**-dividend minus tax credit, **b**-annual rate of dividend plus stock dividend, **c**-liquidating dividend, **cl**-old dividend, **d+new** yearly low, **d+old** dividend declared or paid in preceding 12 months, **d+dividend** Canadian funds, subject to 15% non-residence tax, **i**-dividend declared after split-up or stock dividend, **j**-dividend paid this year, omitted, deferred, or no action taken at latest dividend meeting, **k**-dividend declared or paid this year, an accumulation of dividends with dividends in arrears, **l+new** issue in the past 6 months. The high-low range begins with the start of trading. **m**-next day delivery, **P/E** price-earnings ratio, **r**-dividend declared or paid in preceding 12 months, plus stock dividend, **s**-stock split. Dividends begin with date of split, **sl**-sales dividend paid in stock in preceding 12 months, **est**-estimated cash based on ex-dividend or ex-distribution date, **u**-new yearly high trading based, **vi**-in bankruptcy or receivership or being organised under the Bankruptcy Act, or securities assumed by such companies, **wd**-distributed, **wi**-when issued, **ws**-warrants, **x**-ex-dividend, or **ex-rights**, **xcl**-ex-distribution, **xco**-warrant, **xwt**-warrant, **y**-ex-dividend and sales instill, **yid**-yield as of last.

AMEX COMPOSITE PRICES

*4pm prices
September 13*

OVER-THE-COUNTER

Nasdaq national market, 3pm prices September 1

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AMERICA

Dow edges higher in wait for July's trade figures

Wall Street

EQUITIES and bonds both moved modestly higher yesterday but the mood was cautious in advance of today's US trade figures for July, writes Janet Bush in New York.

The Dow Jones Industrial Average closed 10.67 points higher at 2,083.04 on improved volume of more than 162m shares.

US Treasury bonds reversed falls of up to 1/2 point on Monday to be quoted as much as 1/2 point higher in late trading. The yield on the Treasury's benchmark long bond fell just below 9 per cent again to 8.95 per cent.

Traders in both markets were reluctant to do much business before seeing the trade figures. The consensus is for a deficit of about \$15.5bn on a seasonally adjusted basis in July compared with the shortfall of \$12.5bn in June.

The Federal Reserve Board announced yesterday that it had brought forward the release dates of two other important economic indicators. US industrial production figures for August will now be released today instead of tomorrow and capacity utilisation data for last month will be published tomorrow instead of Friday. The Fed gave no reason for the rescheduling.

Volatility in oil prices was a key factor in the bond market

but provided little overall direction. A rebound in crude prices on Monday depressed Treasuries. Oil prices jumped above Monday's high in early trading on the New York Mercantile Exchange, but they were reported to have been substantially selling at those highs.

Both equity and bond markets are suffering from a lack of direction amid uncertainty about the domestic economy and policy abroad. Another reason for caution is the gathering in Paris tomorrow of officials from leading industrial nations, who are preparing for the month's meetings of the International Monetary Fund and the World Bank.

Fed Funds have been trading in a narrow range around 8 1/2 per cent in recent days and concern about further tightening moves by the Fed have not been in focus. However, Mr Lyle Gramley, a former Fed governor, told the Joint Economic Committee yesterday that further clampdowns would probably be needed to slow US growth to a non-inflationary pace. Funds were quoted at 8 1/2 per cent in late trading.

Kroger, the supermarket and drug stores chain, jumped 11 1/2 to 51 1/2 on news of a restructuring which will include the payment of a special dividend of \$40 in cash and a debenture valued at \$8 for

F W Woolworth jumped 1/2 to \$51 1/2, apparently on more takeover speculation centering on the Haft family.

Canada

GOLD and energy issues pushed Toronto higher in mixed trading, on turnover of 20m shares. The composite index rose 7.9 to a session high of 3,264.3.

ASIA PACIFIC

Nikkei posts small gains despite profit-taking burst

Tokyo

TRADING started on a strong note yesterday but soon fizzled out to leave equities only modestly higher at the close, lacking inspiration from home and abroad, writes Michiko Nakamoto in Tokyo.

The Nikkei average, which shot up 136.52 points soon after the opening, suffered from profit-taking in late morning and managed to recover only slightly at the close.

The index ended the day up 37.42 at 27,794.16 after moving between a high of 27,914.24 and a low of 27,711.11. Advances led by 478 to 365, while 200 issues were unchanged. Volume was higher at 875.8m shares, compared with 768m on Monday.

Later in London, Japanese shares inched higher with the ISE/Nikkei 50 index rising 0.10 to 1,806.00.

Investors in Tokyo at first continued buying big capital steels and shipbuilding stocks, encouraged by recent stability in overseas interest rates and currency markets. Steels, however, lost their momentum and ended generally lower.

The day's most heavily traded issue was NKK, up Y3 at Y718 with 107.1m shares traded. Nippon Steel, the second busiest stock at 105.1m, rose in the morning to a high of Y795 but closed Y3 down at Y780.

Kawasaki Steel, at 96.6m shares the third most heavily traded issue, rose Y3 to a new high of Y784 in the morning but ended Y3 down at Y778.

Shipbuilding and heavy industry lost early gains but generally managed to end well. Mitsubishi Engineering and Shipbuilding was heavily traded and added Y12 to Y632, while Sumitomo Heavy Indus-

tried advanced Y22 to Y821.

The shift in demand later in the day towards blue chips such as Matsushita and Sony was described by an analyst as "window-dressing" by securities firms before their statement of accounts this month. Such high-tech issues were generally stronger with Matsushita adding Y50 to Y780 and Sony up Y40 at Y6,740. TDK gained Y50 to Y4,800 and Pioneer advanced Y20 to Y3,670.

Real estate issues remained strong throughout the day. Mitsui Real Estate rose Y10 to Y2,440 and Mitsubishi Estate increased by Y100 to Y2,810. Mitsui Real Estate has attracted interest recently on speculation that Oriental Land, in which it has a 49 per cent equity stake, will be listed on the TSE. Both companies are popular for their property assets.

Among losers, Konica plunged on rumours, denied by the company, that it had cash flow problems. The manufacturer of photo-sensitive materials lost Y120 to Y1,530.

Government bond prices strengthened slightly in Tokyo yesterday and the yield on the benchmark 105th bond ended at 4.15 per cent in large-lot transactions, down 0.030 of a point from Monday. Buying increased during the day but this was followed by selling on profit-taking.

In Osaka, equities took strength from New York's continuing firmness and volume rose considerably to 120.7m shares from Monday's 94.98m.

Steels in Osaka, in contrast to their performance in Tokyo, generally firmed in heavy trading. Kawasaki Steel, the most heavily traded issue at 10.6m shares, gained Y23 to Y780 on Monday.

FT-ACTUARIES WORLD INDICES

Jointly compiled by the Financial Times, Goldman, Sachs & Co., and Wood Mackenzie & Co. Ltd., in conjunction with the Institute of Actuaries and the Faculty of Actuaries

NATIONAL AND REGIONAL MARKETS	TUESDAY SEPTEMBER 13 1988			MONDAY SEPTEMBER 12 1988			DOLLAR INDEX				
	US Dollar Index	Day's Change %	Pound Sterling Index	Local Currency Index	Gross Div. Yield	US Dollar Index	Pound Sterling Index	Local Currency Index	1988 High	1988 Low	Year ago (approx)
Australia (85).....	139.00	+0.7	121.43	115.93	4.06	138.08	120.70	114.61	152.31	91.16	172.66
Austria (16).....	87.61	+0.2	76.54	84.11	2.49	87.43	76.42	83.82	98.18	83.72	98.15
Belgium (63).....	115.71	+0.0	101.09	112.29	4.49	115.76	101.19	112.05	139.89	99.14	129.93
Canada (11).....	117.99	+0.7	101.71	112.41	3.45	117.91	101.71	101.71	128.91	107.04	135.54
Denmark (39).....	125.25	+0.2	109.69	121.41	2.45	125.51	109.72	121.07	142.52	102.42	115.46
Finland (26).....	117.40	+0.5	102.56	108.02	1.59	116.84	102.14	107.41	139.53	106.78	
France (128).....	93.62	+1.1	81.79	92.41	3.51	92.41	80.91	91.15	99.62	72.77	114.45
West Germany (100).....	77.82	+0.6	68.02	74.89	2.47	77.38	67.64	74.22	80.79	67.78	103.28
Hong Kong (46).....	100.95	+0.8	91.51	101.20	2.04	101.24	90.94	101.24	111.88	84.90	146.00
Ireland (18).....	70.95	+1.1	114.40	127.20	2.73	121.05	114.54	127.09	144.25	101.50	140.00
Italy (100).....	70.64	+0.4	61.72	72.80	2.76	70.39	61.53	72.49	81.74	62.99	84.33
Japan (456).....	160.98	+0.6	140.64	135.50	0.54	159.99	139.85	134.91	177.27	133.61	142.88
Malaysia (36).....	138.24	+0.5	120.77	140.93	2.78	138.53	121.44	141.68	154.17	107.83	177.05
Mexico (11).....	102.45	+0.2	91.51	101.51	1.51	102.45	91.51	102.45	116.00	90.00	134.40
New Zealand (20).....	102.93	+0.2	89.93	97.96	4.49	102.71	88.79	91.40	110.46	92.23	128.88
Norway (25).....	108.32	+0.2	62.31	61.09	6.13	71.16	62.21	61.04	84.05	64.42	136.01
Singapore (26).....	121.66	+0.3	106.29	111.20	2.46	122.04	106.69	111.40	135.87	98.95	178.26
Spain (43).....	137.10	+0.8	119.77	128.58	3.51	138.26	120.87	129.02	164.47	120.73	162.72
Sweden (35).....	116.41	+0.1	101.70	110.42	2.58	116.31	101.67	110.24	125.50	96.92	130.58
Switzerland (55).....	75.17	+0.4	65.67	72.65	2.34	74.89	65.46	72.12	86.75	74.13	109.26
United Kingdom (323).....	107.08	+0.8	108.40	109.36	4.26	107.61	101.70	101.18	120.66	102.60	
USA (586).....	109.35	+0.3	95.93	109.05	3.44	109.05	95.32	109.05	113.47	95.19	129.67
Europe (1,009).....	102.10	+0.6	89.20	94.53	3.65	101.50	88.72	102.82	97.01	126.57	
Europe (449).....	135.48	+0.6	118.56	117.90	1.76	125.76	112.70	125.76	132.61	104.20	137.18
Europe (1,678).....	109.74	+0.3	95.88	109.04	3.62	109.31	95.64	108.77	113.29	99.78	130.17
Europe Ex. UK (686).....	88.33	+0.4	77.17	86.00	3.16	87.95	76.89	85.43	92.95	80.27	110.40
Europe Ex. USA (390).....	116.45	+0.1	102.81	108.20	4.26	116.45	102.81	102.81	125.77	97.01	132.50
World Ex. US (187).....	134.54	+0.6	117.54	117.25	1.77	133.73	116.90	116.40	145.49	120.26	137.78
World Ex. UK (2,134).....	124.82	+0.5	109.05	115.13	2.16	124.23	108.60	114.63	131.77	111.77	132.92
World Ex. So. Af. (2,397).....	124.86	+0.5	109.08	114.67	2.37	124.24	108.61	114.14	132.39	113.26	134.35
World Ex. Japan (2,001).....	107.37	+0.4	93.80	103.77	3.74	108.93	93.47	103.32	112.43	100.00	130.76
The World Index (2,457).....	124.74	+0.5	108.98	114.49	2.39	124.12	108.50	113.96	132.38	113.37	134.67

Base values: Dec 31, 1986 = 100; Finland: Dec 31, 1987 = 115.03 (US \$ Index), 90.791 (Pound Sterling) and 94.94 (Local).

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Holiday season squeezes French turnover

FINANCIAL TIMES SURVEY

Growth rates for the personal computer and software industries have exceeded the expectations of market analysts in the last three years. However, manufacturers in the sector are facing some significant questions, as Alan Cane explains here.

Competition intensifies

THE PERSONAL computer industry is in transition. Some would argue that the changes now taking place are close to the final stages in the evolution of the personal computer as it takes its rightful place in the hierarchy of data-processing machinery.

Be that as it may, the speed and profundity of the changes have turned the comparatively simple personal computer industry of a few years ago into a jungle of competing technologies, powerful alliances and legal posturing.

On top of that, a world shortage of computer storage, of high performance memory chips, has caused problems for many manufacturers just when the personal computer market was beginning to show some years of retrenchment.

Significant industry questions include:

□ How quickly can IBM, the world's largest computer manufacturer, secure market acceptance of its new personal computer design, Personal System/2?

□ Will OS/2, the operating system built by leading US software house Microsoft, for Intel 386-based personal computers, become the new industry standard?

□ How successfully can Apple Computer defend the



ABOVE, centre: Mr William Gates, chairman of Microsoft, and one of the most influential figures in the personal computer business, says the market is now in exceptionally good health.

Also pictured: work underway in computer graphics on an Apple Macintosh computer (right) and on an IBM Personal System/2, (left).

Personal Computers

"look and feel" of its innovative graphical human interface in the courts? Controversies like these apart, the market is in rude good health. Mr William Gates, chairman of Microsoft and one of the most influential figures in the personal computer business says: "The main thing that is happening is that personal computers are selling super-well. It is hard to explain why the market is so healthy, but for the past three years, growth rates have exceeded our expectations. The majority of that business today is MS/DOS machines, 30386-based machines and, increasingly, 386SX machines".

Figures from Dataquest, the US-based market research firm, put Mr Gates' optimism. They show that the US personal computer market grew from \$40.4m in 1987 to an estimated \$20m this year and is expected to touch \$250m by 1992.

In Europe, Dataquest's subsidiary Intelligent Electronics reports that the market grew by 65 per cent in unit terms in 1987 compared with 1986 and by the same per centage in value. Intelligent Electronics points out, however, "This high value growth reflects in part the weakness of US currency against all the European currencies during 1987. A true fig-

ure in local values is in the order of 35 per cent."

Still very healthy growth; but why should Mr Gates emphasize the significance of sales of MS/DOS computers?

MS/DOS is an operating system, a sophisticated computer program that controls the internal working of the computer and is the key to the kinds of applications which can be run on a computer and the efficiency with which they operate.

Developed by Microsoft eight years ago, it's become the industry standard after its adoption by IBM for its first generation personal computers, the PC, PC-XT and PC-AT.

It proved a unifying force in the industry, the only real alternative being Apple Computer with its entirely different Macintosh technology. IBM computers and IBM PC-compatible machines, which run the same software as IBM even if their internal circuitry is not identical, use microprocessor chips from the US semiconductor manufacturer Intel. The most advanced of these is the 386SX which can run at a speed of 25 megahertz - its internal clock ticks 25 times every second. Apple Macintosh computers, however, use microprocessors from another US semiconductor manufacturer,

Motorola. All of these chips process bits of information 32 at a time, like mainframe computers.

A year ago, IBM launched its PS/2 family of personal computers, a new design incorporating a feature called Micro Channel Architecture, (MCA). Ostensibly, a mechanism for moving data more efficiently through the computer, and hence improving performance, MCA also made it difficult for IBM's competitors to copy the design, something that had proved to be child's play with the original PC.

It did not, in fact take long, for imitators to reverse engineer to start with the product and work backwards to the design) MCA - and in any case, for a fee, IBM was willing to license the technology.

Apriicot Computers in the UK was one of the first to take advantage of IBM's licensing arrangement, producing earlier this month its Q1 range of machines, claiming the performance of a high powered workstation for the price of a conventional PC.

Mr Roger Foster, Apricot chief executive, said at the launch that IBM's license was in fact more of a waiver. They had not opened their designs to Apricot, simply turned a blind eye to the reverse engineering:

"IBM does nothing to help. You are on your own," he said.

Apricot, in fact, used a set of chips that emulate MCA, designed and fabricated by Chips & Technologies, a Silicon Valley semiconductor manufacturer.

Along with PS/2 and its innovative MCA design came OS/2, written as a joint effort by Microsoft and IBM and one of the most complex computer operating systems ever devised. Compared to the limited functions of MS/DOS, OS/2 can address (talk directly to) four gigabytes (32 billion bits) of memory, opening the way to massive performance improvements.

Nonetheless, the introduction of PS/2 and OS/2 gave the market a problem. In companies large and small, computers running MS/DOS (now identified as industry standard architecture or ISA computers) had become the norm - masses of software, including such industry favourites as the best-selling spreadsheet of all time, 1-2-3, and the filing program Dbase II ran under MS/DOS. Many businesses were still coming to terms with the implications of personal computers as executive workstations.

There was no great market pull for a new design of com-

puter or a new operating system and this was reflected in a comparatively sluggish migration to the new design. IBM's tougher competitors, like Compaq which is now snatching a powerful share of the corporate market, proclaimed the value of ISA.

Typically, personal computers are linked using a local area network (LAN) and low cost and efficient technology or a single personal computer can serve a number of users at separate terminals, a multi-user system.

Which is best? Stephen Bean, senior marketing manager of PC products at Unisys believes there is no clear cut winner. The choice depends on the variables. But he points out that there are at present more LAN-based application programs than there are for multi-user systems - "combine this with the low cost of implementing a LAN, then one would tend to favour LANs as the route to take for multi-terminalisation," he says.

The implication is that the market is fragmenting into discrete areas. First, there is a market for personal computers used to develop individual productivity - such machines will almost certainly use MS/DOS. Large corporations will increasingly move to OS/2 machines to power individual productivity for their executives but also as the basis of work group computing, a team

of executives co-operating together and sharing files, programs and information over networked personal computers. OS/2 is designed so that computers using it can easily be linked together.

ON OTHER PAGES

□ International section, pages 2-4.

□ Industry issues, pages 4-6.

□ Technical developments, pages 6-7.

□ Software issues; case studies, pages 8-10.

NEWS

THE MARKET

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PERSONAL COMPUTERS AND SOFTWARE 2

Powerful domestic demand and extraordinary export growth are fuelling this hugely profitable sector, says Louise Kehoe

Record revenues and profits for US makers

U.S. PERSONAL COMPUTER-makers are riding the crest of a booming market.

With domestic sales fuelled by demand for new, high-performance personal computers and extraordinary growth in

The US makers' sales of PCs are expected to exceed \$23bn this year, up 17 per cent on last year

export sales, the major US personal computer makers are charting record revenues and profits.

Sales of personal computers in the US are expected to top \$23bn this year, up 17 per cent on last year.

The overall figures mask runaway growth in the high end of the personal computer market where sales are estimated to be running at an annual growth rate of 38 per cent, according to figures from Dataquest, the California market research group.

Behind the personal computer boom is the unrelenting progress of semiconductor technology which has yielded microprocessors capable of carrying minicomputer workloads

at desktop computer prices.

Creating new demand for personal computers are software applications in the burgeoning sectors of desktop publishing, desktop presentation and computer-aided design.

The personal computer is seen increasing as the key element in a new corporate data processing system in which individuals can tap into corporate and remote data resources while maintaining control over their own desktop computer.

The success or otherwise of the personal computer in business is perhaps best illustrated by the phenomenal growth, this year, of sales of "laptop" or portable personal computers in the US.

Up 76 per cent over last year, sales are expected to reach close to 1m units by the end of the year.

Apple Computer, Compaq Computer, Dell Computer and Tandy are among the biggest winners in the US PC market this year. Each has increased its share of the lucrative business sector, while Apple and Tandy have also strengthened their hold on the education and home computer markets.

IBM, still the largest supplier of personal computers to US corporations, claims strong

sales for its 16-month old Personal System 2 products with more than 2m units sold.

However, according to most US market researchers, IBM's share of the personal computer market continues to slip. Store-Board Inc., a Richardson, Texas market research firm, says for example that IBM's share of computer dealer revenues in the US PC market decreased by 13 per cent in the second quarter of 1988 compared to the same period last year.

The outcome of the Apple litigation, which has drawn an aggressive countersuit from Hewlett-Packard, is expected to have a major impact on the look and feel of personal computers in the future.

Major computer makers including IBM and Hewlett-Packard, Xerox, Sun and AT&T along with software developers like Microsoft, are convinced that graphical user interfaces are the way to go.

The major advantage is that they make it easier to learn how to use a computer by replacing arcane keyboard commands with simple menu choices.

If Apple wins its case, however, it may be difficult for other companies to create graphical user interfaces that look similar to the Macintosh screens. Alternatively, if Apple loses, Macintosh-like screens may proliferate.

The uncertainties surrounding operating system and interface software standards appear to have done nothing to curb demand in the intensely-competi-

tive personal computer market.

Now, it seems, are customers ever so sensitive to price. In recent months US personal

The outcome of the Apple litigation, which has drawn an aggressive countersuit from Hewlett-Packard, is expected to have a major impact on PCs in the future

computer prices have stabilised and in some cases risen as manufacturers pass on the cost of steep increases in memory chip prices.

The memory chip shortage

has become a major concern to

all US computer makers, drawing many personal computer executives into the complex political debate over the US-Japan semiconductor trade. Japan supplies an estimated 80 per cent of the world's memory chips.

According to the latest estimates from industry experts, the shortage may continue for as long as another 12 months - pushing prices still higher and causing problems for major US personal computer makers.

If the chip shortage worsens, it could put the brakes on the current US personal computer boom, another high growth year in 1988.

Japan

Market still well below its potential

JAPAN'S personal computer market has long been encumbered by a variety of problems.

These include: incompatibility between the different manufacturers' equipment; lack of a tradition of keyboard use; complexity of the software required to handle Japanese script; and, in particular, the dominance of a single manufacturer, NEC Corporation, which holds 70 per cent of the 16-bit machine market.

Consequently the market continues to function well below its potential size, in terms both of hardware and software. But signs of change are slowly emerging.

Attempts to establish a unified IBM/MS-DOS standard in Japan to be known as the AX (architecture extended) are gaining wide support.

IBM's OS/2 looks set to provide a standard OS for 32-bit PCs within the next few years and Japan's increasing ties with international companies, particularly in the financial sector, have produced a new momentum towards compatibility with systems in use worldwide.

Probably the biggest success story of the past year has been "laptop" units in the office market. Users have shown such interest that manufacturers have been obliged to develop customised local area network adaptors.

Toshiba has been the chief winner. It claims to have sold Y12bn-worth of IBM-compatible laptops in the fiscal year ending March 31 this year, in a market which it estimates to total Y20bn.

Toshiba forecasts Y24bn of laptop sales this year, in a market worth Y40bn yen, and also recently became the first Japanese company to offer a 32-bit laptop unit.

Industry analyst Steve Myers, of Jardine Fleming, notes: "For Toshiba to go from nowhere to 10 per cent of the entire PC market in just 18 months with a product incompatible with any other then on sale, is most remarkable."

The growing acceptance of laptops is likely to have a strong effect on the marketing strategies of leading companies, and appears to offer support to the basic marketing philosophy of NEC, which has promoted PCs as elements of upwardly-expandable personal information systems, rather than as terminals for large computer systems - the dominant approach of most other companies.

The future direction of the market is also closely tied to user-interest in 32-bit equipment. Demand is expected to grow rapidly, because these machines, equipped with IBM's recently introduced OS/2 operating system, offer a solution to the limited memory addressability and multi-tasking support of 16-bit machines working on MS/DOS.

This limitation is felt more keenly than in the West, because of the high volume of data that must be processed when handling Japanese script. IBM Japan has already managed to establish prominence in this area by introducing the versatile SMART package software for its PS/2, the Japanese version of IBM's 32-bit PS/2.

The Japan Electronic Industry Association expects that annual unit sales of 32-bit machines in Japan will reach 400,000 by 1991, in a domestic market worth Y107.2bn; while 16-bit machines will level off at current annual volume of 1.25m units a year.

A general expansion of the domestic PC market, which currently features lower software purchases per unit sale than the US market, and less than half the growth rate, remains the prime objective of market participants, and the

AX project is one of the most important related initiatives.

The AX project group is led by Microsoft Corporation and consists of more than 20 Japanese hardware and software companies, including Mitsubishi, Sharp and Sanyo.

Until now, individual Japanese personal computer manufacturers have produced customised versions of MS-DOS for their equipment, resulting in a high degree of equipment incompatibility in Japanese offices where, typically, machines of several different makers are installed.

NEC, meanwhile, has continued to benefit from its early entry into the market, which caused software developers to design their products specifically for its equipment - a pattern which has proved very hard for other companies to break.

AX, it is hoped, will enable software developers to invest in products for a unified IBM/MS-DOS environment. This could allow hardware makers to compete on a more even footing with NEC, and provide users with access to a broad range of IBM software.

Marketing AX products presents the main obstacle, as the NEC-oriented market structure of the mass retail shops will oblige participants to develop

The TRON project is further evidence of the urgency with which Japanese companies are seeking to end incompatibility

original sales networks.

One attempt has been made, by Seiko Epson, to open up an NEC-compatible market, but, unlike IBM, NEC does not follow an "open architecture" policy. When Seiko marketed an NEC PC-8800 clone, it was promptly sued by NEC, and other clone production plans have since been abandoned.

The prospect of a more open market for PCs in Japan has already attracted the attentions of manufacturers elsewhere in Asia.

Low-priced NEC electronics goods have been faring well in the Japan market in recent months, but companies such as Acer are expected to face difficulties in providing adequate sales and support structures and brand name recognition.

The Japanese manufacturers are attempting to counter the NBS threat by offering users a wider variety of hardware.

The "wild card" in the market is TRON (the real-time operating system nucleus), a home-grown operating system designed to provide standardisation in computer architecture, which is under development in a Y10bn research project, led by Ken Sakamura, of Tokyo University, and supported by more than 40 Japanese companies.

The TRON project is further evidence of the urgency with which Japanese companies are searching for ways to break out of the impasse of equipment incompatibility, but this "open architecture" initiative could well be upstaged by IBM's sophisticated OS/2, which has already gained the backing of many Japanese companies, and promises to open up even wider software choices.

The danger remains, however, that in the Japanese market OS/2 could represent a replay of the MS-DOS experience, with major companies opting for customised versions of the new operating system, usable only with their equipment.

Roy Garner



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PERSONAL COMPUTERS AND SOFTWARE 4

Manufacturers' fortunes are shifting as sales grow

UK market is restive

THE WORD which best describes the state of the UK personal computer market in the final half of 1988 is restive. The major themes which will shape the market are already visible, but it is not yet clear how far they will develop.

Shipments levels in total are well up. UK sales of PCs for 1988 are heading for a total of 400,000, in a total market worth close to £900m. But growth of the market in 1989 will depend to a considerable degree on what happens during the rest of this year.

The market is restive because changes in technology for PCs are partly prompting and partly coinciding with changes in distribution. In turn, changes in technology are causing a shift in customer loyalty.

The major characteristic of the UK PC market in the first three quarters of 1988 has been the decline in market share of the lower-priced PCs built to run as if they were IBM's older generation of technology.

Amstrad, Tandon and Olivetti have each seen their market share decrease in a rising market. In the five months to May 1988 Amstrad won 22 per cent of the UK market judged by units, according to UK market-research company Context. In the same period IBM won 31 per cent.

This was a reversal of Amstrad's leadership in the final months of 1987 when its lower-priced PCs consistently outsold IBM models.

On the other hand, the market shares of vendors of PCs which are priced higher than Amstrad's and aimed more at the corporate user have held up well. In some cases their share of the market has increased.

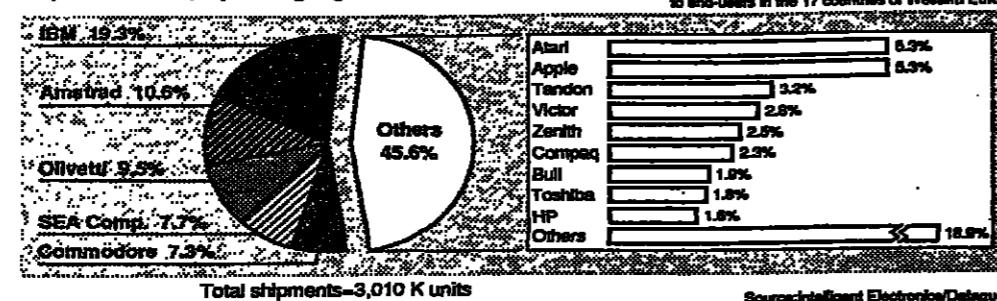
The main beneficiary has been Compaq, the US vendor which is increasingly being chosen by corporate PC users as their second choice to IBM.

Context even put Compaq's May sales of PCs above Amstrad's attributing to it 14 per cent of the market in May compared with Amstrad's 12.6 per cent. As ever, there is dispute between market research companies about the market shares for each vendor.

But the overall trend has been clear: lower-priced PCs based on the older IBM PC

European PC market

Shipments in 1987, all product categories



Total shipments - 3,010 K units

All personal computers from 8000 to 90,000 based on shipments to end-users in the 17 countries of Western Europe

architectures are less attractive to customers. This is a direct result of IBM's change of technology with its new PS/2 range.

The launch of the PS/2, in April 1987, set the technical goals for other makers. The PS/2 range is now based on the Intel 80286 and 80386 microprocessors and has a new way of letting printers and other devices communicate with these microprocessors.

To handle the more complex tasks that PCs are used for, IBM has also changed the operating system, from MS-Dos supplied by Microsoft, to OS/2, jointly developed by IBM and Microsoft. IBM's PS/2 announcement pulled more of its older products from 1984 and three per cent from May this year.

This is a hefty royalty charged on the whole of the PC industry which has grown up around IBM.

The second problem the vendors of compatible PCs are struggling with is to judge whether the new PS/2 architecture is being taken up in sufficient numbers by users to provide enough of a target. Some competitors who have developed compatible PCs are holding them back, claiming that IBM's sales of its new architectures are not high enough.

But the new PS/2 architecture will be established sooner or later. It appeal for corporate users who need access to mainframe and minicomputers for corporate data is clear. So is its attraction to those who need raw processing power for large spreadsheet and database applications.

Competitors know that, at some time in the future, they will have to change. The question is when and how fast. IBM's new PS/2 architecture was already capturing 20 per cent of the UK market, judged by units, in the middle of the year. It was as much as 30 per

cent when judged by value, according to Context.

But the competition is still struggling with two problems. The first is that to offer PCs compatible with IBM's new PS/2 architecture they have to come to a licensing agreement with IBM about using its patents. To be allowed to use its new patents, IBM is insisting that vendors of PCs compatible with its old technology also settle their outstanding payments.

The outcome of these negotiations is shrouded in secrecy because IBM insists on non-disclosure by those who settle. But it is understood that IBM is asking for one per cent of sales income from PCs using its older patents from 1984 and three per cent from May this year.

But the dealers are feeling the squeeze once again. As long as IBM is able to make as many PCs as its customers demand — as is happening now — these dealers find their margins cut.

They cannot afford to invest in the high-priced services of systems integration. They are seeing more and more traditional minicomputer resellers and value-added resellers cut into their business.

PC manufacturers are also increasingly interested in selling directly to the larger companies which will use them. In the first quarter of 1988, 12 per cent of PC sales by units were made directly by the manufacturers, compared with five per cent in the first quarter of 1987, according to Mr Steding.

The traditional dealer is also squeezed by the rise of the distributor who supplies the smaller dealer and the end-user directly. Distributors' share of end-user sales in the UK rose to seven per cent in the first quarter of 1988 compared with five per cent in the same period of 1987, says Romtec.

Richard Sharpe

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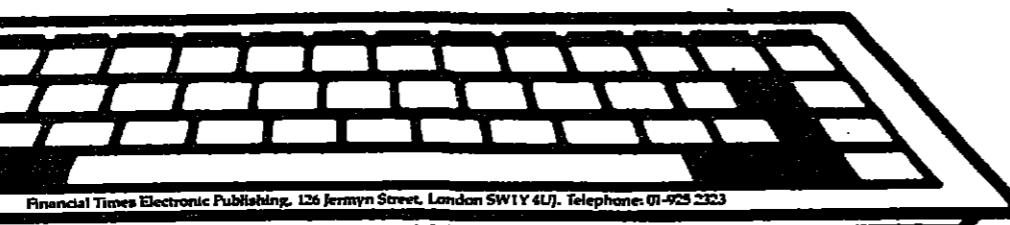
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WEST GERMANY

Quality selling best

Schäfer says in explaining the booming demand for IBM's new PC.

During the first half of 1988, IBM delivered 31,000 PCs with Microchannel, and this should reach 80,000 by year's end, according to a recent IDC analysis.

West Germany is known as a high-price market, where PCs often fetch 10 per cent more than in other European markets. IBM's PS/2-50 costs almost DM 30,000, with a discount reportedly available when your order in quantity. It is West Germany's most popular model, says IBM's long Balser.

In 1987, one third of our PCs sold were Microchannel machines. This year two thirds are sold Microchannel PCs, Mr Balser says. "The Microchannel is pure hardware. We've taken the technology and ideas from the mainframe and reduced it to the PC level."

That sales pitch for multi-user, multi-task PC's has not made IBM's microchannel PC a runaway seller in the United States market. American buyers are apparently waiting to see the software benefits investing in the new hardware.

The surge in IBM sales, with no other microchannel on the market yet to match its promise, is seen by Mr Schäfer as profiting from a major mistake by IBM's rivals in the business PC market.

"It could be a mistake to wait since IBM is increasing its market share," Mr Schäfer says. "IBM's competition is losing a lot of time, saying there is no need now for the microchannel. But when you consider these [IBM] sales statistics, I'd be nervous."

By the end of this year, IBM's share of the professional PC market should triple to 21 per cent, according to a recent IDC survey. It will take a lot of innovation and strong selling to catch up, and by then West Germany's PC market may be saturated.

Dennis Phillips

Rising output in Italy

ENGINEERS (left) make quality-control checks at Olivetti's personal computer production plant at Scarmagno, in Fivizzano, Italy.

Olivetti's leading European PC manufacturer, produces a machine every 15 seconds from one of its four plants. The fully-automated Scarmagno plant produces 500,000 PCs a year and aims to increase this to 750,000. The company has ten PCs in its range and has just launched an entry-level model, the IBM-compatible M220, aimed at the educational and corporate network markets. The basic UK price for the twin floppy disc, monochrome version is around £249.



Developments in industry-standard architecture

The quandaries abound

WHEN IBM launched its Micro Channel Architecture (MCA) as a replacement for the industry-standard PC expansion bus last year, the PC business was thrown into an immediate quandary. IBM had developed a new, proprietary 'bus' structure (data highway), and there was every reason to suspect that the machines of which it was an integral part, the Personal System/2, might be a considerable success.

Most important of all, the company was blithely telling its competitors that they were welcome to invest the two years it had taken IBM to develop the new 'bus' and associated chips if they wanted to compete. It was not going to be so generous as it was with the old PC bus, or its follow-on for the PC/AT.

Eighteen months on, and the situation has changed more than somewhat, (see page 10). All the evidence suggests that the PS/2 family has not been the storming success in the market that IBM had hoped or intended. The company claims that well over 2m units have been shipped, but admits that the majority of these have been the PS/2 Model 30, the one model in the range which does not come with the MCA bus. Instead, this still uses the industry-standard PC bus.

Now IBM is talking openly of licensing competitors in the market, so that they can produce MCA-equipped systems of their own. Companies such as Apricot, Dell, Tandy and Olivetti have systems available, coming, or in the pipeline.

Perhaps the most significant of these is Amstrad, which recently signed a cross-licence deal with IBM, giving each of them access to the other's technology

being ready to introduce a new model in the PS/2 range, the Model 35. This, according to the rumours, will be based on the Intel 80286 processor, and will be equipped not with the MCA-bus, but with the older PC/AT industry standard bus instead.

IBM is not commenting on such a move, but admits that it could be a significant blow to the prestige of the new bus. If IBM is launching a non-MCA machine, then there are those who would argue that the company has a lack of faith in its future.

The technical problems relate mainly to the simple fact that the specifications for the MCA bus are markedly different from the industry-standard PC bus. IBM's intention has been to design a bus that is much faster and more capable of meeting the demands made on the hardware of users running multi-tasking software. IBM claims that the PC bus is weak on this front, as well as slow.

Compaq would deny this, however, and claims that by careful design of the main circuit board of the computer, plus the incorporation of a high-speed internal bus, the standard expansion bus need not be changed.

There is also the suggestion that the industry-standard bus specifications, such as the Multibus II standard developed by Intel, are better than the IBM design. Selecting one of these, the argument runs, would have opened up a much

wider market for both the PS/2 and the existing manufacturers of expansion boards.

Market pull is IBM's major problem with the MCA-bus. There is little current demand for the MCA-equipped PS/2 because there is little applications software available to run on the machine. Software developers and users are still awaiting the arrival of the Extended Edition of the OS/2 operating system, without which there is no point in buying new applications software.

This, in turn, means there is little point in buying a PS/2 just to act as a "go-faster" PC.

Amstrad producing an MCA-equipped computer would certainly give the new bus credibility, but given the company's prime objectives, there must be doubts that it will launch such a system immediately. Amstrad specialises in exploiting an existing market, as it has done so successfully with the PC.

It has not been the company's style to go out and develop a new one. Even if Amstrad does help IBM turn the MCA bus into a major success, the industry-standard PC and PC/AT buses will not go away.

In addition, for many users, such as small businesses and individual professionals, the traditional PC technology will be more than adequate capabilities for many years to come.

MCA systems will prove to be a benefit only where users require big, fast systems to run multiple applications under an operating system such as OS/2 or, perhaps more possibly, Unix. There are enough users of this type to make a successful market, but for now most of them are still sitting on the fence.

Martin Banks

□ A challenge for IBM - see page 10.

PERSONAL COMPUTERS AND SOFTWARE 5

MODERN NETWORKING technologies and the growing use of Unix, the multi-user, multi-tasking operating system, are beginning to make nonsense of conventional notions of the "personal computer".

The latest supercomputers from Cray Research, the world's leading scientific computer manufacturer - the Y-MP, the Cray 2 and the soon-to-be-launched Cray 3 - all run Unix's own version of Unix.

Based on AT&T's Unix system V, one of the principal Unix "standards", Unix is compatible with all Cray hardware and allows the supercomputers to run interactively in a

network.

Within five years, Seymour Cray, Cray Research's founder and chief designer, expects to be able to build a supercomputer not much bigger than a pocket calculator. Built into a network it would afford individual users access to enormous computing power. As John Volkswagen, chairman of Cray Research puts it: "Supercomputers are becoming a personal computer business".

Networking is the next great stage in the evolution of business computing. At the major Unix supplier IBM says: "The microcomputer marketplace is in the very early stage of polarising towards two extremes: cooperative processing on the

Evolution of networking and open standards

A very hot issue

one hand in which the personal computer is an intelligent workstation embedded in a network of similar and dissimilar systems; and on the other, freestanding, independent and typically portable systems for which there is no better generic term than personal computing."

Networking is the next great stage in the evolution of business computing. At the major Unix supplier IBM says: "The microcomputer marketplace is in the very early stage of polarising towards two extremes: cooperative processing on the

computer business.

And not only a very hot issue, but a very confusing one, with manufacturers adopting a variety of often contradictory stances.

For some years now, the world's standards organisations have been agreeing a

possibly based around IBM's Netview, its set of performance measurement and problem determination tools.

NCR, for example, has developed a technology it calls System Interconnect Architecture which brings OSI and SNA together. It also provides either

developers would feel encouraged to write applications programs knowing they could be run on a wide range of hardware.

X/Open's aims include not only the establishment of a common applications environment, but also a common user interface (X Windows) and a common networking standard (XTI or X/Open Transport Interface).

As an X/Open member, IBM is of course at one with these aims. It is also a founder member of the Open Software Foundation which is developing a

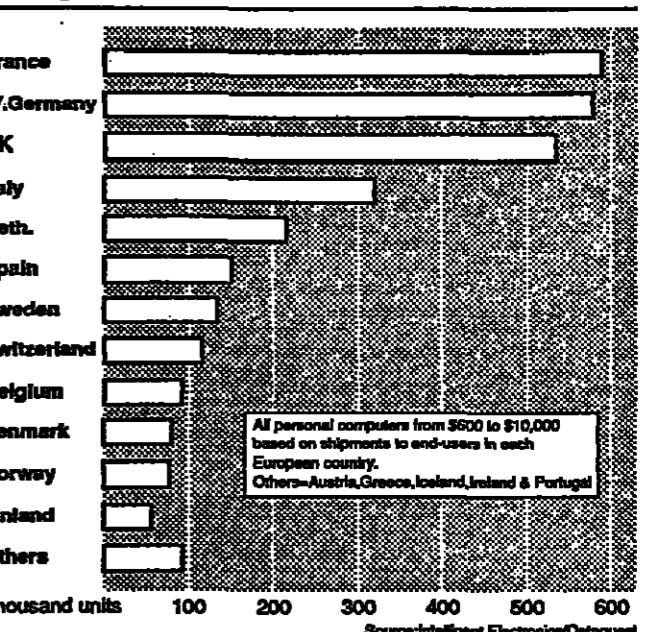
version of Unix based on IBM's proprietary AIX operating system.

Essentially the job of X/Open and other organisations in the computing standards arena is to find a way to cut through the technological foliage and give computer users a clear view of what networking and networking standards involves.

There can be no doubt that the networked computer is the way of the future - but at present, how that future will evolve is far from obvious.

Alan Cane

European PC sales - 1987



Multi-user computing Unix broadly accepted

MULTI-USER computers have long been considered rather specialised machines, found normally in large organisations and universities, running complex applications on a fairly grand scale.

Recently, however, they have come into the market of computer systems, particularly because of the operating system which has predominated in that specialist market, Unix.

The Unix operating system, developed by AT&T's Bell Laboratories many years ago, has been popular in the multi-user systems market because of its ability to run multiple tasks for multiple users.

For a long time this has been a rather specialist requirement, but as the power and performance of the personal computer have expanded to match that of the traditional minicomputer, "the use of Unix as an operating system has spread".

Its chief advantage is that it has a measure of hardware independence. This means that an application program written to run under Unix on one computer will run on a different type that also runs Unix.

In practice, this portability has required a certain amount of re-writing of the application, but far less than the complete re-write that would otherwise be necessary.

To this capability must now be added some other interesting strands. The growth in power of the personal computer has led to the multi-user market. PC-based systems running the MS-DOS operating system have given rise to a whole new range of applications, and the availability of these new products gives all gain access to a rapidly-expanding market.

The PC based, with its MS-DOS operating system, has demonstrated its portability by giving the most cynical of PC managers that portability of application software across a common hardware environment, regardless of the manufacturer of the specific computer, is an extremely useful capability. This has led directly to the growth in user demand for "open systems".

Here, the users are starting to drive the computer market, and multi-user sources are finding themselves in a leading role. The X-Open organisation, the group of leading computer manufacturers which recently gained IBM as a member, is setting out to bring together the necessary hardware and software standards which will make the user's desire for open systems a reality.

It is claimed to be a good solution for any application where a real-time embedded system is required, such as in retail systems, but has the disadvantage of not working with MS-DOS applications at all.

Other multi-user operating systems work with DOS applications. A leading contender is Digital Research's Concurrent DOS, which, in its latest release, runs on Intel 80386 microprocessors and can run thousands of DOS applications directly, in a multi-tasking, multi-user environment.

The multi-user DOS system is a good example of a vertical market application. It is aimed squarely at Business Management applications, primarily running in a multi-user environment. Networked networking is also available, as such it is a sensible system, in that the operating system is integrated with the networking.

However, it can also run under DOS and VMS and VMS in the DOS/VMS mode, with such facilities as hot-key conversion between DOS and host environments.

One of the latest entrants is PC-DOS from DEC. This is specifically designed to the needs of the specialised PCs and offers comprehensive multi-tasking and multitasking abilities, plus the ability to work with a wide range of existing DOS applications, including WordStar, Lotus 1-2-3 and dBase II.

For the range of applications in the multi-user environment, however, Unix is now firmly established as the standard operating system to specify, even if it is not the best and most expensive accolade only by being available first.

— Martin Banks

set of rules for the connection of any computer system to any other computer system - Open Systems Interconnection or OSI. Divided into seven sections or "layers", the OSI rules are close to completion.

Furthermore, they are supported by all the major vendors including IBM, Digital Equipment, ICL, Unisys and NCR.

Some like Unisys have buried the principle of OSI deep in the design of their machines. Others - IBM is the best example - have retained proprietary networking systems for connections between their own equipment while providing a "bridge," special translation software, to OSI-based systems.

Because of the significance of IBM in the world data processing market, however, most

wide area networking involves all the techniques essential to enable computers to communicate over long distances - typically a complex and expensive business.

Local area networking, the principle technology where personal computers are concerned, involves ways of moving information economically over short distances - typically within a building or suite of offices - at high speeds with high levels of accuracy.

Leaders in LAN technology include Banyan, Novell, 3Com and IBM and all of the US.

A recent survey by the US research consultancy Datapro suggests that new standards will evolve for network management in the near future.

Nevertheless, the majority of major computer vendors, mainframe, mini and micro, are agreed that Unix should be the basis for the standard operating system for small and medium sized computers.

The principal lobby for this viewpoint is X/Open, an international organisation whose members include AT&T, Bull, Digital Equipment, Fujitsu, Hewlett Packard, IBM, ICL, NCR, Nixdorf, Nokia Data, Olivetti, Philips, Siemens, Sun Microsystems and Unisys.

The aim of X/Open is to establish a "common applications environment (CAE)" a standard interface between the computing hardware and the applications software confering two valuable benefits.

First, customers would be able to run the same applications software on hardware from any vendor offering the CAE. And, second, software



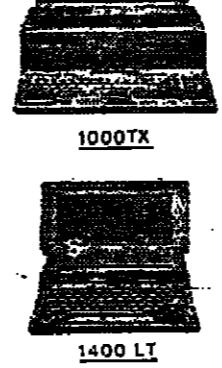
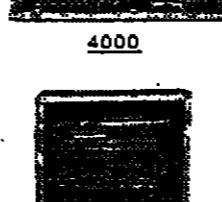
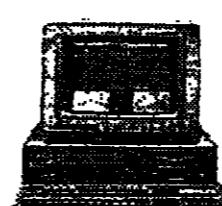
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PERSONAL COMPUTERS AND SOFTWARE 6

High performance personal computers

Distinctions blurring

THE DISTINCTION between high-powered technical workstations and personal computers is becoming less clear.

Workstation manufacturers are beginning to produce devices which possess many of the attributes of PCs, while PC manufacturers are building systems which are powerful enough to poach on workstation territory.

This common ground has largely been created by the availability of 32-bit microprocessors, the most influential of which is the Intel 80386. The 80386 is the most powerful of the family of processors used in the IBM and compatible PCs which dominate the market.

It is speed and performance have allowed companies such as IBM, Compaq and Olivetti to develop systems which can be used for processing-intensive applications such as computer-aided design and finance areas where workstation manufacturers have staked their claim in the past.

The 80386 has also allowed workstation manufacturers, such as Sun Microsystems, to build products which offer the level of function associated with their workstation products combined with the ability to run software written for PCs.

Sun, the leading producer of technical workstations, was the first to bridge the gap between workstation and PC when it introduced its Sun 386 in April 1988. The 386 is based on the 80386 processor running, as do the most powerful PCs from IBM and Compaq, at either 20 or 25 megahertz.

Like the other workstations in the Sun range, it can run software written for the Unix operating system. Unlike the others, it can also handle MS-Dos, the operating system for which most PC software is written.

Sun developed the 386 in response to pressure from two different groups of users, according to Mr John Coon, UK marketing programmes manager. "There was pressure from workstation users who wanted to take advantage of the huge number of applications available in the Dos world, and there was pressure from PC users who wanted to move up to Unix."

The 386 is a conscious attempt on Sun's part to provide a bridge between work-

stations and PCs. In pricing it reflects that fact. At the low end of the range the 6,000 model is in line with the prices for high-powered PCs; at the high end the 18,000 is more typical of workstation pricing.

Target markets for the machine are not dissimilar to those aimed at by PC manufacturers, with the financial sector and small to medium-sized businesses among those on the list.

PC manufacturers also believe that the lines between the workstation market and their own are becoming blurred. Not surprisingly though, they view the phenomenon from a different angle.

Sun is at some pains to stress that the 386 is not a PC but a workstation which is designed for networks - in an effort to steer clear of the huffy border of the PC market.

But according to the PC manufacturers, it cannot avoid competing with them. "We are seeing a definite shift towards PCs and away from dedicated workstations," says Richard Stone, PC marketing manager for Olivetti.

There are a number of reasons for this, Mr Stone says. The power of the 80386 has meant that applications which were only available on dedicated workstations are now available on PCs. As a result without losing much function users can have their dedicated application and be part of a larger network of PCs.

When it is PC-based, "the workstation becomes part of the corporate environment, whereas at the moment it is a separate environment," he says.

A variety of forces have pushed PCs into workstation territory. Manufacturers such as IBM, Compaq and Olivetti have increased the performance of their PCs in an effort to distance themselves from the cut-throat competition at the low-price, low-performance end of the market.

At the same time, the use of the 80386 processor has encouraged the software suppliers whose products are already running on workstations to broaden their markets by moving their software on to PCs.

Finally, more users are connecting their PCs into local-area networks so that information can be exchanged between users.

Margaret Coffey

The combination of these three factors gives high-end PCs many of the qualities of low-end workstations: they can now perform complex tasks as part of a distributed processing system. As a result, Mr Stone says: "We're certainly starting to see PCs in areas of business where companies would never have considered them suitable two or three years ago."

The middle ground between these two camps is becoming even more fiercely competitive in the future. By this they intend to convey the idea that their PCs are no longer simply individual, or personal, computers, but systems which are integrated into a larger corporate computing whole.

This is certainly IBM's intention with its new PS/2 range. By including the machines in its Systems Application Architecture - an overall plan which should eventually mean that users will be able to run the same software on their IBM PS/2, mid-range AS/400, or mainframe System/370 computers - IBM is trying to place the PS/2 in an overall computing context for its customers, something it has never done with its PC range.

The technology will be available for PC manufacturers to continue to push their products to new heights of performance. Some samples of the 80386, the next generation of processor from Intel, are expected to be available in the first quarter of 1989.

One company, Unisys, has already said that it will be building a PC system based on the 80386. Like the products from workstation manufacturers, it will run the Unix operating system.

To protect themselves from this attack from below, more workstation manufacturers will have to add bridging products to their ranges. To keep their customers happy they will have to offer them the best of both worlds by providing the facility to run MS-Dos-based software.

It will be some time, if ever, before PCs can challenge the technical workstations in their true strongholds. But they are fast encroaching on the periphery.

A way out of the problem for larger companies is to maintain permanent chip-buying agencies in San Francisco, Tokyo and Hong Kong to take advantage of the standard price for a Megabit (the latest memory chip) might be \$17 to \$20 but if you went to the spot market you might pay \$30 to \$40. So we have to make the decision

whether it's worth putting memory in our products which have cost us \$15 over the scheduled price. There's a threshold which it's not worth going over."

These "spot" markets are supplied by three main sources: by chip manufacturers wanting to make quick profits when prices are high; by speculators who buy chips and sell them in the hope of price rises; and third, by equipment manufacturers unloading chip stocks to make a profit on the difference between the price at which they have been supplied by chip manufacturers and the price they can get for them on the spot market.

Spot market outlets for these various "unofficial" sources of supply are advertised in the trade press, chip dealers, silicon brokers and informal contacts with distributors of agencies known to be in short supply.

The problem for the buyer in the spot market is that prices are usually between 25 and 50 per cent higher than prices from manufacturers and their franchised distributors - known as "scheduled" prices.

A buyer for one of the UK's leading PC makers says: "We have scheduled orders on most chips but if the suppliers let us down we have to go to the spot market."

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PERSONAL COMPUTERS AND SOFTWARE 7

COMPUTER PRINTERS

New levy puts large market in a state of flux

WHILE THE basic purpose of a printer is to put ink on paper, users' actual requirements vary remarkably. Even where the highest quality is not necessary, or cannot be afforded, the appearance of the finished document can influence the reader.

Not only is printer technology evolving at a rapid pace, but the market is large. According to International Data Corporation, it was worth over \$8bn in 1987.

Today it is in a state of flux, because of the EEC anti-dumping levy of 33.4 per cent (on top of the 4.5% import duty) on dot-matrix printers (DMPs) from Japan which came into force at

the beginning of this month.

Epson views this as protectionism, where the only sufferer will be the consumer. The company points out that European prices are already significantly higher than those in the rest of the world, with, for example, a printer that costs \$500 in the US, it is well qualified to appreciate the situation, because it is the European market leader in the middle sector for DMPs. While EEC manufacturers account for only 17 per cent of the market, it has 45% with other Japanese manufacturers around 38%.

It is too soon to see what the effects of the levy will be. The

decreasing price differential with respect to other printers may accelerate the move to laser printers; alternatively, prices of all printers might drift upwards.

The daisy-wheel, once the staple office high-quality printer because of its crisp image, has given way to the laser, because of speed and noise level, as well as its being constrained to printing only the characters on the daisy-wheel. DMPs, which were widely used to provide draft quality at high speed, can now also provide near letter quality print.

Despite the improvement in dot matrix technology, many users would switch to laser printers were it not for high initial and running costs, except in circumstances that specifically require an impact printer — for example, where multi-part forms are being printed.

Competition in the DMP market has led to better quality from print heads incorporating up to 24 pins, higher speed (both draft and letter speed), wider ranges of type fonts and typefaces, graphics, and improved paper handling. The latest printers incorporate a "paper-parking" facility, which obviates the need to remove continuous stationery from the printer in order to insert a cut sheet or an envelope.

Strange as it may seem to the stand alone PC user struggling to cope with his or her 10 Mbyte hard disk, 860 Mbytes is still not enough. When an engineering department wants to store its library of drawings on-line, when a document department or typing pool has 20 or more users all storing all of their documents on one single storage device, even 860 Mbytes is soon consumed.

Put simply, magnetic media is unlikely to satisfy the projected demands of even PCs — never mind the requirements of local area network file servers, or the 100+ multi-user systems driven by Motorola 68030 and Intel 386 and 486 microprocessors.

Because of this, there is a great stampede by all the major disk producers to develop the first — and therefore the likely de facto standard — laser disk.

The capacity of laser technology is enormous: it is measured in tens or hundreds of Gigabytes (1,000 Megabytes). But there are problems. The first is the performance of the data — fixed laser writing technique — permanently after the surface of the disk itself.

Several different laser technologies exist, but the difficulty is in finding a technology suitable for rewriting.

Many magazines talk about the advent of "erasable" optical disks. This is a misnomer. There is little problem in erasing the data on an optical disk; the problem, and the requirement, is to rewrite new data over the old.

For this reason, the coming technology should be called "rewritable" rather than "erasable". Future rewritable optical disks probably will be based on magneto-optic technology — that is, like current magnetic disks the surface will be magnetized but the magnetizing implement will be light.

Today, despite several announcements about the unreliability of rewritable optical disks, we still have write-once disks. These are generally known as Worms (Write Once, Read Many). They are ideal for the storage of on-line large scale non-changing databases — bibliographic text databases, for example.

But they are also useful wherever the application demands a security audit trail. Since the disk space cannot be re-used, any alterations to the stored data are recorded elsewhere on the disk. This means that there is a permanent record of everything that happens to any file.

Rewritable disks using magneto-optic technology are already possible. They will inevitably begin to make inroads into the existing Worm market when they are finally produced.

But the main problem with rewritable optical disks is one of speed. At the moment, the technology can take up to five disk revolutions to perform a single rewrite. This creates a potential bottleneck.

The microprocessor can now handle dozens of users, and the laser disk can hold billions of characters, but the whole process is slowed down to the speed of the disk access technology. It is like stringing a Jaguar racing each other to the next traffic lights.

Manufacturers are now working on two development methods to reduce the number of revolutions required to a maximum of one, and the ability for disks to be formatted as either Worm or rewritable.

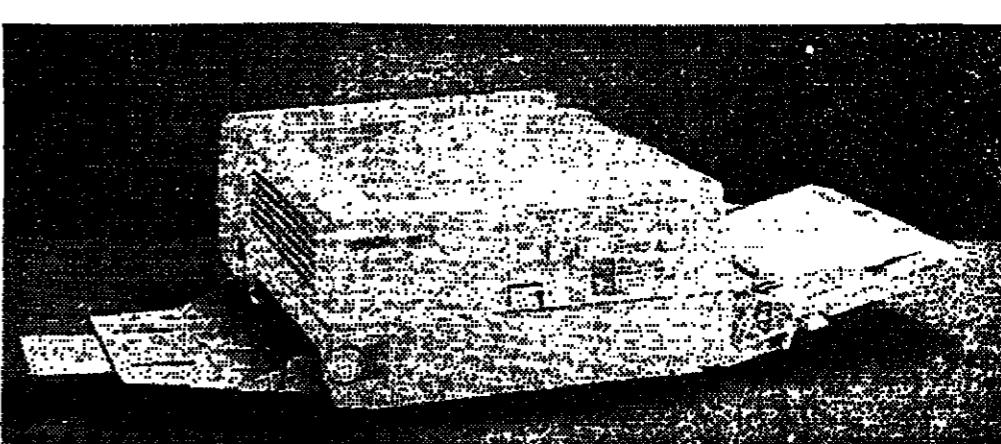
Both these developments are likely to be available by the spring of 1989. But their acceptance will depend on one major imponderable: the extent to which the user is willing to abandon old records in favour of electronic records.

Options include card-based systems (that simply plug into the internal expansion slots within the PC) already able to provide up to an additional 100 Mbytes; replacement disks; or additional external hard disks. The latter two provide the

lished line of 9-pin DMPs. The two models are respectively 80 and 136 columns wide, and both have print speeds of 264 cps for draft and 54 cps NLQ (near letter quality). A selection of typefaces is built into the printers and can be called up as required in normal or italic type. Text can be enlarged to double-width and double-height, to create added impact. As Epson printers tend to be in normal or italic type, they must not only be reliable to meet the needs of the job, they must also be low-noise to meet the needs of staff.

West German company Philips Communications Industries appears to have taken versatility to the extreme with its GP310 DMP. Fourteen are available in the machine, each printable in double height and/or double width. It employs a multi-coloured ribbon, allowing printing in standard black plus three basic colours (cyan, magenta and yellow). Under software control, the colours can be combined to produce a variety of mixed colours (near full-colour printing). It will also accept a black ribbon when colour printing is not required.

One of the many printers on the market that competes with this and other Epson printers is Star's LC24-10, a 24-pin



■ Epson's laser printer (above), model GQ500.

■ Right, Star's LC24-10 professional quality printer, one of Epson's many competitors.

Dot matrix printers, once widely used to provide draft quality print-outs at high speed, can now also provide letter-quality print.

The highest resolution (300 dots per inch), low-noise graphics capability, together with high throughput, makes the laser printer the ideal choice for the busy office, as long as multi-part forms, colour, or large paper sizes are not required. Its cost, complexity, and the use of consumable toner pushes the cost per page above that of DMPs. Nevertheless, where a steady stream of work is required, carried out almost silently at a rate of five to eight pages a minute, it is unequalled.

While this is well below the output demanded of a busy office, there are many users who need this high quality and who have only a relatively low output. Thus, it could be a viable alternative to the laser. Unfortunately it appears that, for a while anyway, it will be available with a good range of fonts but not with the full DTP requirements. Maybe it is so good that H-P is afraid that

it would eat into its own laser printer market.

For the average user,

it is a matter of comparing features, special applications require special printers. Gianni Bertino, Northern Europe Sales Director of Honeywell



It is an exceedingly low-noise machine which will, according to H-P, print on virtually any reasonable grade of paper. It has a rated throughput of around 50 pages a day, and the company describes it as a personal printer.

It was launched six months ago for engineering and CAD/CAM applications, and is now being directed at the growing desktop presentation market. While it is beyond the reach — and needs — of most users, it may be the harbinger of products that will offer comparable performance at lower prices.

Adrian Morant

STORAGE TECHNOLOGY

Era of the laser disk

PERSONAL computers are no longer isolated islands of computing; in many cases they are being used as powerful workstations attached to the company mainframe.

But just as frequently, particularly in the smaller organisations that cannot afford mainframe computers, they are being used to drive multi-user systems and/or within local area networks.

The latest PC software applications also demand considerably more storage space than their predecessors; a picture may be worth a thousand words but it takes up considerably more disk space.

While a large word processing text file might require, say, 50 kbytes of disk, the same text laid out within a desktop publishing file might require 500 kbytes.

There is also a growing tendency and requirement to use the computer system as a document filing cabinet, especially in connection with text retrieval software. For whatever reason, the storage capacity of the original PC/XT (10 Mbytes) is woefully inadequate.

The demand for increased storage capacity at little or no increase in cost has done two things: it has created a large and rapid surge in the popularity of traditional magnetic disk storage, and it has spurred the development of laser disk technology.

It has also created a new market for replacement hard disks, where users can buy higher-capacity Winchester drives and install them into existing PCs.

This is a useful but dangerous exercise. The danger is in buying the cheapest replacement available — and cost is almost the last thing that should be considered. Corporate data is corporate lifeblood and should not be entrusted to an inexpensive product from the local high street with a photocopied sheet of instructions and no back-up.

A spokesman for Ideal Hardware, one of the country's major hard disk distributors, says: "I would always recommend that users get their supplier to undertake the upgrade — but if they insist on doing it themselves, then Prioram is probably the only supplier that produces suitable products with satisfactory back-up."

While such products give an upgrade route for existing users, they do not in themselves indicate the way disk technology is evolving.

Floppy disks are showing the least development. This is because every PC must have a drive that is suitable for program distribution — which means that they must all be as compatible as possible.

The current situation is probably as varied as it dare become: PCs in general use 5.25in disks with 360 kbytes capacity; ATs use 5.25in disks with 1.2 Mbytes capacity; and PS/2s use 3.5in disks. The operating system may be the same, but the disks are not generally interchangeable.

Suppliers are already being forced to provide software on both 5.25in and 3.5in, and it is becoming a significant cost factor. Any further fragmentation would be intolerable.

So, although floppy technology is actually able to offer disk capacities of 5 Mbytes or more, we are unlikely ever to see this reach the market.

Hard disks (often called Winchester because they are thought to have been developed by IBM at its Winchester laboratory in the UK) are a different matter. They are used solely for data and program storage, not for program distribution.

Because of this, it is perfectly possible for every single PC to have a different size and capacity hard disk.

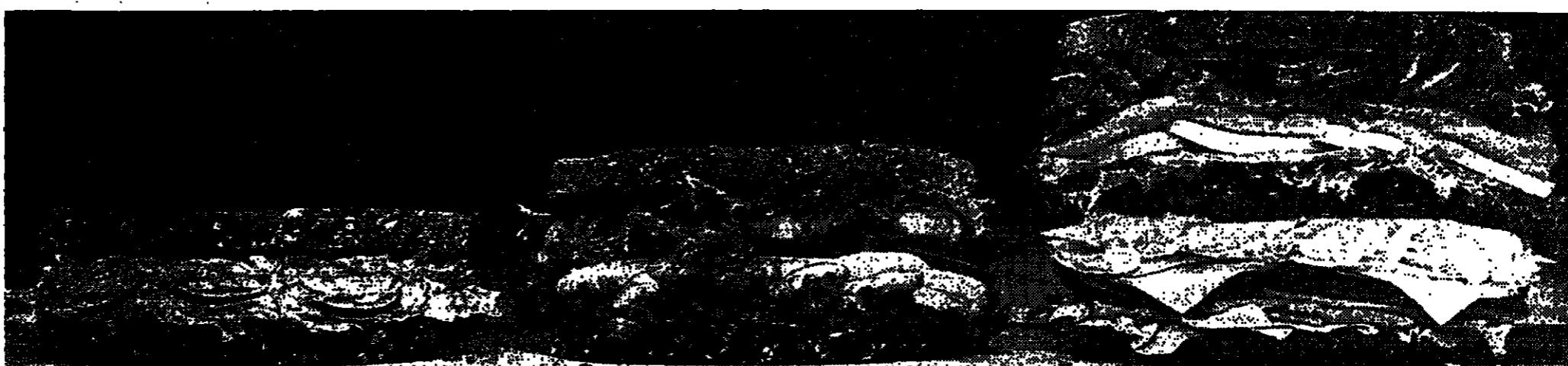
Options include card-based systems (that simply plug into the internal expansion slots within the PC) already able to provide up to an additional 100 Mbytes; replacement disks; or additional external hard disks.

Kevin Townsend

machine designed for professional computer users who require a maximum carriage width of 10 inches. At \$279 (prior to levy), it offers speeds of 170 cps for draft and 57 cps for true, professional letter quality output". As well as eight built-in fonts, other fonts can be provided by means of plug-in cards.

For the average user, it is a matter of comparing features, special applications require special printers. Gianni Bertino, Northern Europe Sales Director of Honeywell

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Creating value

PERSONAL COMPUTERS AND SOFTWARE 8

High performance microprocessors

Designers' dilemma

GORDON MOORE, co-founder and chairman of Intel and a legend in the semiconductor business, is famous for having postulated several fundamental laws of that industry. Two of them have specific relevance to the growth and potential of the microprocessor and its application in future personal computers.

His first law states that the number of transistors that can be designed into a single chip will double every 18 months. Moore first suggested this some 20 years ago, and it still holds true.

The first semiconductor memory produced by Intel, for example, could store just 256 bits. The largest dynamic memories now in production can store 1,024,000 (1 Mbit) 4,000 times as much. The next jump, to 4 Mbit capacities, should happen next year.

Moore's second law states that as the transistor count goes up, so does the potential number of different functions which can be designed into a single chip. As the number of functions actually designed in to a chip goes up, the number of potential applications goes down.

This poses semiconductor designers with a dilemma. The technology gives them the facility to design a wide range of different functions into a single chip. The more functions they put in, however, the more over-specified and less relevant a chip will become to the majority of users.

The importance of these laws is now becoming apparent to the personal computer business, for the potential of rapidly advancing the power and capabilities of the machines has to be balanced against the realities of the market. In particular, the very success of PCs, and the attendant wealth of applications software available, is a significant drag on technological development.

Intel's success with its range of microprocessors, for example, may have pleased the company's bank manager but it has severely restricted its scope for new designs and developments. The 16-bit 80286 processor, and the new 32-bit 80386 processor, have been specifically designed to accommodate software previously written for the hugely-successful 8086 processor.

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with up to 100m transistors will be possible by the year 2000, it is difficult to see how so much power potential will be applied to the software them available.

Areas where it can be applied successfully do exist, however. Future processors may well be still compatible with 8086 and 80386 software code, but they will include much of what is now achieved with separate devices in current computer designs.

It is likely that a wide range of control functions — for example input/output, disk drives, memory and graphics — will be incorporated into the processor, together with the system memory required. This leads to the idea of a single chip implementation of, for example, today's IBM PS/2 Model 80.

Not only will this allow small, cheap PCs to be produced, it could lead in turn to developments in parallel processing. This is the coming style of computing generally, with devices like the Transputer from Inmos leading the way.

Applications software is still the major problem, however. Outside of specialised graphics applications, there is currently no general applications software available for the Transputer. This may change, however, as an implementation of Unix is under development for the processor.

If it proves successful, this would open up the potential to run many Unix-based applications on a parallel processing machine. The idea of single chip PC processors running existing applications in parallel is another way in which semiconductor technology might be adapted to square with the software drag.

A major contender for a place in any future personal computer is the Reduced Instruction Set Computer (RISC) chip technology. A number of these device types are already available, and while some argue about their efficacy outside of specific applications areas such as Computer Aided Design, they are already becoming the chosen route for high-powered Unix-running workstations.

Given the growing moves towards Unix and open systems architectures, RISC processors could well take a significant share of future personal computer business.

This is certainly a long-term direction to watch for from the driver of much of the PC business, IBM. Mr George Conrades, IBM vice-president in charge of workstations, said recently that those users looking for performance beyond the limits of the Intel-based PC and PS/2 products, should now look to the company's RISC-based RT/PC range.

As it will be including the Micro-Channel Architecture bus in future RTs, the company obviously feels it can see the end of the PC as it is known today, as well as the end of Intel's dominance in the market.

Martin Banks

FEW COMPUTER applications have ever been dominated to the extent that the microcomputer spreadsheet market has been dominated by Lotus 1-2-3.

During this time, the rapid evolution of computing in general has been very little change to the spreadsheet market. It was, and is, primarily a two-dimensional calculator that is suitable for little more than numeric doodling.

The spreadsheet's limitations are closely tied to the limitations of the personal computer. In many ways the application can be described as the archetypal PC program (it may be remembered that the first successful microcomputer spreadsheet was a product called VisiCalc, running on the Apple II).

Indeed, there are those who believe that Apple's success as a manufacturer is due more to the success of VisiCalc than the success of the original Apple hardware.

Initially, then, the spreadsheet was a personal productivity tool operating entirely in memory with a memory limit raised to 640 kbytes. Suddenly, the spreadsheet could do much more.

It was into this market that 1-2-3 was launched — and it has been so successful that an entire software industry of add-ons, and-ins and applications has developed around it.

The basic functionality of the spreadsheet expanded rapidly. Database functions were added (conceptually, a work-

"A1 plus A2" to show the VAT and gross values respectively).

If the content of cell A1 is changed, the values shown in A2 and A3 are automatically (dynamically) recalculated. A complete matrix of cells saved as a file is known as the worksheet.

Business graphics features were added so that, for example, a worksheet showing sales by month could be translated into a pie chart for visual presentation at a meeting. These three features, incidentally, are the three aspects of 1-2-3.

The program, and the workbooks it processes, need to operate in memory for the selling point of "dynamic calculations" to be possible. This means that both the size of the program (and therefore the number of features, functions and so on) and the size of the worksheet (the number of rows and columns in the matrix of cells) are both limited by the size of computer RAM available to the PC.

So, in the early days of 64 kbytes 8-bit microcomputers running the CP/MS operating system, spreadsheets were capable of little more than personal numeric calculations. To call such a program a "financial-modeller" really stretched the advertising claims to the limit.

But then came the 16-bit DOS-based PC, with an effective memory limit raised to 640 kbytes. Suddenly, the spreadsheet could do much more.

It was into this market that 1-2-3 was launched — and it has been so successful that an entire software industry of add-ons, and-ins and applications has developed around it.

The basic functionality of the spreadsheet expanded rapidly. Database functions were added (conceptually, a work-

sheet is a database, a row is a record, the columns are field types, and a cell is an individual field).

Business graphics features were added so that, for example, a worksheet showing sales by month could be translated into a pie chart for visual presentation at a meeting. These three features, incidentally, are the three aspects of 1-2-3.

The spreadsheet was and still is a single-user, stand-alone personal productivity tool not really suited for corporate modelling. But, under the DOS operating system, it has become an excellent tool for the small business user or individual executive.

During this time the PC has developed so successfully that all the previous design limitations of the spreadsheet application have been beaten and the result is inevitable will be a great surge in new features, better functionality, and faster performance. We are now seeing the emergence of a new generation of spreadsheets capable of what even die-hard mainframe scientists admit to be "true computing."

The two latest trends in spreadsheets can be summarised by the products that the market now awaits: Lotus 1-2-3 and Lotus 1-2-3/G. The second "G" stands for more than just "Version 3" although it is this too; it stands primarily for the 3rd dimension.

The basic spreadsheet is only two-dimensional (rows by columns, or sales by time). It is

this limitation more than anything else that keeps the spreadsheet out of corporate planning. However, the third dimension means that spreadsheets can now analyse sales by time by region.

Think of it as a series of separate, but similarly-designed worksheets, one on top of the other. Each worksheet still shows sales by time, but now sales can be analysed by region within time just as easily as sales by time within region.

The effect is to lift the spreadsheet's capabilities on to another plane (literally), when it becomes a valuable tool even for large corporations.

Lotus' 1-2-3/G will have similar capabilities, but is designed for the emerging world of graphics-based computing. Following the success of the Apple Macintosh, IBM is in the process of moving its microcomputer character-based DOS operating system, to the graphics interface of Presentation Manager under OS/2.

Presentation Manager and OS/2 are, of course, only aspects of a wider IBM philosophy that of drawing all its systems together within a single user interface. The concept is known as System Application Programming Architecture (SAA).

It means that applications will appear the same to a PS/2 user as they will to an AS/400 or System/390 mainframe user.

Lotus is currently working with IBM to develop a main-

frame version of 1-2-3. The primary difference is that it will be multi-user. 1-2-3/G will be the microcomputer version of this program, using the graphics interface of Presentation Manager.

Graphics-based programs already exist, primarily on the Macintosh. Trapeze is an excellent example. Not only does it allow many features not normally associated with a spreadsheet, it also allows the incorporation of graphic images within a text-based spreadsheet — and the graphics can be freehand illustrations or data-driven graphs.

Excel has been converted from the Mac to run under DOS and MS Windows on the PC/AT and PS/2, but it will be only in interim product before a Presentation Manager version is produced. The likely future development will be for character-based programs to remain under DOS, while graphics-based programs will migrate to OS/2 and Presentation Manager.

Microcomputer spreadsheets now stand on the verge of a brave new world. They are about to break into the corporate market proper and they will become increasingly easier to use, thanks to the power now available to PC users and the new graphics interface pioneered by Apple.

In both cases, it is unlikely that anything will threaten the domination of 1-2-3 in the foreseeable future.

Kevin Townsend

SPREADSHEET DEVELOPMENTS

A new generation emerges

Microcomputer spreadsheets now stand on the verge of a brave new world. They are about to break into the corporate market proper and they will become increasingly easier to use, thanks to the power now available to PC users and the new graphics interface pioneered by Apple.

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Kevin Townsend

GRAPHICS

A major influence

THE Apple Macintosh has forever changed the face of computing.

It is well known that Xerox, not Apple, pioneered the visual interface (the basis of Macintosh computing) at its Palo Alto Research Center (Parc), but it was undoubtedly the Macintosh that brought personal computing into its second generation.

We have now entered the age of graphics-oriented rather than character-oriented microcomputing. Ever since the Macintosh appeared, rivals have flattered it by sincere imitation. Indeed, the latest flattery has resulted in a court case between two of the world's leading computer companies: Apple and Microsoft.

Microsoft has developed a graphics-based visual interface, MS Windows, which in its latest version is considered by Apple to have too much of the look and feel of the Macintosh original.

Whatever the rights and wrongs of the legal argument, the fact remains that with Microsoft bringing Windows to the IBM PC and the DOS operating system (and to the PS/2 and OS/2 operating system with Presentation Manager), the entire personal computing industry has opted for a graphics interface.

This is having a profound influence on computing. At one time, the basis of computing was the character — now it is the image. At one time computer graphics was limited to the conversion of data into graphs — today graphics and a graphic approach are inseparable from the concept of the automated office.

Once, the graphic image was built from a combination of character blocks (the quality of which — or lack of quality — can still be seen in the graphics of Ceefax and Oracle on TV); while today, graphic images are constructed from all the individually addressed dots available on the display screen.

The effect of this new approach to microcomputing can be summed up in a single word: integration. All the latest moves in computer graphics are aimed at that single requirement: the integration of graphics with other OA applications.

At one level this can be seen in Lotus Corp's Freelance product.

Ms Shirley Davies, Lotus' product manager, says that when the first graphics packages appeared, "they were either Draw, Paint or Chart-like applications, graphics traditionally designed for geometric diagrams, freehand artwork and data-driven graphing respectively."

"Today," she says, "users are beginning to demand, and to get, all of these functions

within a single package."

Freelance is one that offers this, but it is not just that graphics packages are improving — graphics functions are increasingly being incorporated within other applications, while the ability to import images into text-based applications, and to export them from graphics applications, is becoming more widespread.

Consider PageMaker from Aldus. This was originally designed for the Macintosh (showing the importance of the Mac to the development of graphics) but is now also available on the PC under DOS and will be available under OS/2.

PageMaker is the archetypal desktop publishing package. It includes a basic text editor, but functions best by importing text from a more powerful wordprocessor.

It also has its own basic graphics features (primarily of the "Draw" type), but again is primarily designed to import images from other packages.

However, it is easier to understand packages such as PageMaker if they are viewed as "graphics" systems in their own right. Mainstream work processors, such as MicroPro's WordStar Professional, are primarily word-based systems.

Because of this, they use one unchangeable fixed character style (usually governed by the hardware's system software) to show words on the screen.

Graphics-based packages such as PageMaker treat the characters as small images — and since you can have many different images you can have many different typesetting styles.

This is the basis of the concept known as WYSIWYG (pronounced "wizwig") of the printed page on screen, to within 1 point of accuracy.

Users will be able to zoom into the previewed page at equal size, double size and even quadruple size, and will be able to scroll around that page. Professional 5 will also be able to include graphics.

MicroPro has another word processor, WordStar 2000 (designed for text publishing rather than high-powered word processing) that includes a graphics program called INSET. INSET has a feature known as a screen-grabber. It is able to recreate any screen image and save it as a separate picture file.

Inset is available as a stand-alone package. It could be used with Professional 5 to create text output with graphics included. For example, managers could create graphs automatically from company data with Lotus 1-2-3, capture the image with Inset, and then import the image into Professional 5.

The text would flow

Graphics-based packages such as PageMaker are designed to be compatible with themselves — they are designed to be compatible with textual applications (whether graphics-based DTP or character-based word processing).

The important thing about graphics today is not just the quality, but its compatibility with the rest of the automated office.

The PC graphics market is dominated by the use of graphic images in support of written documentation — as in DTP and illustrated word processing. But the increasing power of PCs is developing two new areas: engineering design and decision support.

PERSONAL COMPUTERS AND SOFTWARE 9

THE MOST widely-used application on a personal computer is, without doubt, word processing - and the most widely-known WP software package is WordStar. This package has been around since 1978 when it was originally available for the then *de facto* microcomputer operating system, CP/M.

Since then, more than 3m copies of the various versions of WordStar have been sold. Even without the vast number of pirate copies in use, the vendor, MicroPro, claims to have the largest installed base of word processing software in the world.

In comparison with today's WP packages, the original WordStar was relatively primitive and only had a limited range of facilities and was laborious to use. In fact, MicroPro says that the constant improvements have resulted in only about 10 per cent of the original code remaining.

With the introduction of the IBM PC, with its more powerful microprocessor, it became possible to develop far more sophisticated WP packages. Not only did they offer a wider range of facilities, they were more simple to use, if they were more user-friendly. Consequently, today's WP's bear little relation to those of even a few years ago.

This development did not seal the fate of WordStar because once a user has become competent in the application of a package, it is a major step for them to learn another.

Hence, it is not the cost of

the new package which is the deterrent, but rather the time and cost of learning to become adept with the new package. Furthermore, there would be the problem of reading files prepared using the previous program.

Not only that, standardisation is frequently of vital importance in the corporate environment. It must be possible for one person to be able to edit and otherwise manipulate a document prepared by another.

For example, an executive, when preparing a report, may wish to dictate the bulk of it to his secretary. The disc may be returned to him so that he will be able to both complete the report and to check for typing errors. The secretary may finally find the document to enhance its appearance and then do the printing.

This highlights just some of the varying needs encountered in an office, even without there being any special technical requirements such as incorporating a special spelling checker of technical, scientific or medical terms.

Equally well, while users at one time were satisfied to have a means of inputting and editing text and obtaining a hard copy, there is more emphasis today on incorporating graphics as well as moving towards desktop publishing (DTP). Consequently, selecting the right WP package is a key decision which should not be taken lightly.

A comparison carried out earlier this year by the independent reviewer, Infocorp, on

the then-current versions of Microsoft's Word, WordPerfect, MultiMate Advantage II, DisplayWrite 4 and WordStar 2000 Plus, ranked the last-named Number One on 11 of the 16 features assessed. The report stated that it was the product which would appeal to the widest variety and largest number of users.

Nevertheless, it is believed that one of the other WordStar products, WordStar Professional, will be enhanced in its next version, Release 5, so as to be easier to use.

It is expected that it will have pull-down menus, in addition, it is expected to have increased laser printer and Postscript support to enable it to handle the DTP. Thus, if not clear that MicroPro does not see one product being able to satisfy all word processing needs.

Similarly, while nothing has been confirmed, it is expected that Microsoft will bring out several new WP packages in the coming months because it is increasingly recognised that, with the huge range of people now using WPs, no single package can be all things to all users. This is despite the fact that Microsoft Word has been adopted as their standard WP package by many corporate users because of its wide range of features.

For example, mouse control together with on-screen menus make the package easier to operate than one just using function key keys; outlining allows creators of long and complex documents to build them within an easy structure under headings and sub-headings; and style sheets allow complex layout and printing styles to be attached to entire documents with a single key-stroke.

Not only should features be taken into account - it is important to have adequate support. For example, Peter Ferguson, managing director of Sentinel Software, the exclusive UK distributor of the best-selling WordPerfect package, stresses the point that his company provides lifetime support for licensed users, which includes "help-lines" and local computer upgrades.

He warns of the risks of buying from low-cost "box shifters" who may be selling non-UK versions which will, for example, not have the correct UK keyboard driver or a true UK spelling-checker. (However, when one looks at the advertised discount prices, especially from the US, the temptations to cut corners are very great.)

WordPerfect also helps users prepare for the longer term by being available for a wide range of dissimilar machines. Version 4.2 offers complete file compatibility between DEC, Data General, IBM PC and compatibles, Amiga, Atari and Apple computers without any program conversion.

While the vast majority will not need this facility, it does show its potential for being relatively "future proof." Not everyone goes for the well-known names. The Pharmaceutical Journal, the organ of the Royal Pharmaceutical Society, has recently provided its editorial staff with PCs and has standardised on Xywrite from Xyquest of Bedford, Mass., in the US.

This is a high power package that is not driven in a similar manner to AT&T, the high-performance commercial word processing system used by national newspapers and major publishing houses. It features all the typical word processing capabilities plus split-screen editing, custom formatting options, footnotes, cross-referencing, tables of contents and index creation.

Where it appears to score is with factors such as its speed of operation, including its instant single-word spelling checker, and its ability to switch easily and rapidly between up to nine text windows.

What are the likely future

Software applications

PC usage in the home

Word processing

Data base and file management

Spreadsheet

Games

Graphics

Household finance

Education

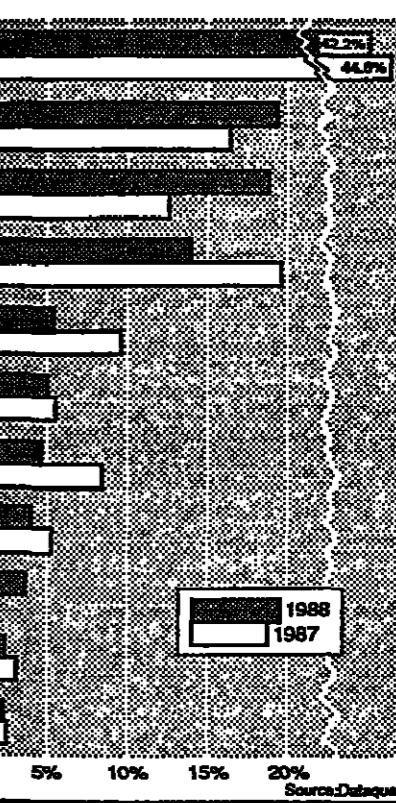
Programming languages

Business accounting and bookkeeping

Productivity tools

Operating systems

0 5% 10% 15% 20%



Word processing is the most widely-used application for personal computers in the 'home office,' as well as in the business environment, as the above chart indicates. The latest WP software packages are increasingly simple to use.

Adrian Morant

LAPTOP COMPUTERS

Portability brings big benefits

WHAT IS a laptop computer? It's simply a machine that can be operated while on one's lap. Does it run from internal batteries or does it need to be connected to a mains supply? Is it compatible with standard desktop personal computers?

A laptop computer can be all or any of these and, while almost everyone knows what the term means, one person's definition will not necessarily be the same as another's.

Further, the original meanings, definitions and applications are now being stretched beyond all recognition by the rush of new technology.

For the manufacturer, designing a laptop computer is rather like trying to put a quart of alcohol into a pint pot - one knows that it is impossible to get them all in but has difficulty in deciding which ones should be left out.

Consequently, a large amount of research is carried out into miniaturisation, to increase the packing density, together with market research to identify specific features for which people are prepared to pay.

First generation machines, such as the widely-used Tandy model 100 (and the 102 which superseded it) with its 40 character x 8 line LCD display, were, and still are, ideal for the production of solid processor and found favour with many journalists.

A battery-powered unit the size of a telephone book and weighing less than 4lb, it had built-in software to carry out word processing, telecommunications, address book, and scheduling functions.

It could be carried anywhere and, with suitable peripherals, could print out a document or even send the material down a telephone line to a remote computer. As a result of its ease of use and versatility it was widely adopted.

The Tandy model 200, with its 40 character x 16 line display, and the Cambridge 200 (80 char. x 8 lines) are developments on the same theme. The latter, in particular, is aimed at packing as much functionality into a very lightweight portable unit - its memory can be expanded to over 1Mbyte (enough for about 200 typed A4 pages) and its software even includes a spreadsheet.

These machines are small, light and do not incorporate disc drives and so have the potential to be fairly robust. While they can meet the needs of many and data can generally be transferred between them and standard PCs, they are not compatible with such machines.

This is an important factor to many who need to be able to use the same programs and, equally important, to use the same data while on the move.

For those who must have PC compatibility, Toshiba's T100 bridges the gap. At 6.5lb it is the smallest and lightest IBM-compatible machine with a built-in disc drive. It will run for up to five hours on its built-in rechargeable batteries.

Even though experienced PC users may feel constrained by having just one disc drive, its size and weight combined with relatively low cost make it an acceptable compromise for many.

The next vector is the laptop computer which is small enough to go into a briefcase and yet pack the same "punch" as many a desktop PC, has



most powerful: a portable computer from Data General

attracted the most competition. The Tandy 1400 LT PC has two built-in 3.5 inch disc drives each giving twice the capacity of the older 5.25 inch drives.

Like all the major competitors, it is self-contained, running on built-in rechargeable batteries and featuring a built-in "SuperTwist" LCD display for clarity.

Other machines in this class, while fundamentally similar, may be smaller in size, lighter in weight, or incorporate a hard disc instead of one of the 5.25 inch floppies, in the light of what a particular manufacturer's market research dictates as being most significant.

For example, Sharp has its PC-4200 series, ranging from a single floppy machine to one with a 20Mbyte hard disk. While "rugged" has "squashed down" the height of the displays in its T1100 and T1200 machines so that the machines are only marginally over 12 inches square.

Thus, this company is placing the need for portability over the requirement for display of normal aspect ratio.

On the other hand, the Zenith SuperSport 2-184 has the normal aspect ratio screen but is about three inches longer. It does, however, feature a detachable battery to, as the company's literature says, reduce weight and size when a transportable or desktop system is the only requirement.

Here lies the crux of the matter. Laptop computers are no longer just for use while sitting in airport lounges, they are frequently bought for their sheer portability - that is, their ability to be readily moved from one place to another.

This may mean that an executive can take a machine home to finish a task or an accountant can take the computer with him when he is carrying out an audit on a client's premises.

While the vast majority of PCs are not in the hands of "power-users" needing 386-based machines, users are coming to expect higher performance. For this reason, there are a growing number of both battery-powered and mains-powered 286-based machines from a wide range of suppliers each leap-flogging each other with features or performance.

For example, Toshiba has just announced its T1600 portable desktop 286, in the same size package as its T1200, which is fully AT compatible and can support EGA high resolution graphics. This latter is a feature which has previously been absent in this class of machine.

If the truth be told, this machine and the other 286 laptops are noticeably more powerful than the vast majority of the PCs at present on people's desks.

Different effects apply to machines that are intended to be portable rather than be used

WORD PROCESSING PACKAGES

An increasing choice

range of dissimilar machines. Version 4.2 offers complete file compatibility between DEC, Data General, IBM PC and compatibles, Amiga, Atari and Apple computers without any program conversion.

While the vast majority will not need this facility, it does show its potential for being relatively "future proof." Not everyone goes for the well-known names. The Pharmaceutical Journal, the organ of the Royal Pharmaceutical Society, has recently provided its editorial staff with PCs and has standardised on Xywrite from Xyquest of Bedford, Mass., in the US.

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It features all the typical word processing capabilities plus split-screen editing, custom formatting options, footnotes, cross-referencing, tables of contents and index creation.

Where it appears to score is with factors such as its speed of operation, including its instant single-word spelling checker, and its ability to switch easily and rapidly between up to nine text windows.

WordPerfect also helps users prepare for the longer term by being available for a wide range of dissimilar machines. Version 4.2 offers complete file compatibility between DEC, Data General, IBM PC and compatibles, Amiga, Atari and Apple computers without any program conversion.

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